PAC INTERNATIONAL LTD

PAC 2200 Series Controllers

User Guide

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Version 2.0 **May 2002**

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IMPORTANT:

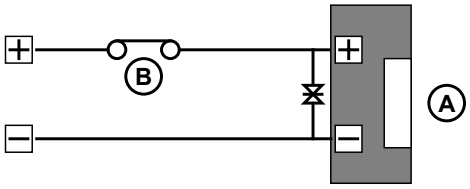
When installing the PAC equipment the following should be noted:

HEALTH AND SAFETY

Installation must wired in accordance with National Wiring Regulations (BS7671, IEE National Wiring Regulations in the UK). Failure to do so can result in injury or death by electric shock.

It must also comply with any local Fire, Health and Safety regulations. A secured door that may be part of an escape route from an area must be fitted with:

- **A fail-safe lock (A) so that the door will be released if the power fails. Ideally a magnetic lock should be used as these are less likely to jam or seize.**
- **A normally-closed break-glass or manual pull (B) in the lock supply wiring so that in an emergency the fail-safe lock can be immediately depowered.**



The controller must be earthed.

Isolate the controller supply before working on the controller.

CABLING

The cabling used in the PAC Access Control Systems (six wire bus, reader cables, etc.) are not prone to electrical interference. However, you should avoid routing cable close to heavy load switching cables and equipment. If this is unavoidable, cross the cable at right angles every 3.3-6.6ft/1-2m to reduce the interference.

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Abbreviations Used in this Document

AB	Address Bus
AEM	Alarm Event Manager
AVR	Automatic Vehicle Recognition
CH	Channel
CMD	Command
CNC	Central Network Controller
DC	Door Controller
DL	Down Load
DOT	Door Open Time
DR	Door
ID	Identity
IP	Input
LED	Light Emitting Diode
LK	Lock
LRT	Lock Release Time
PB	Pass Back
PB-TIM	Pass Back Timeout
PBC	Pass Back Controller
PC	Personnel Computer
PIN	Personal Identity Number
PINTP	PIN Reader Time Profile
PTP	Primary Time Profile
RDR	Reader
RTE	Request To Exit
SAL	Secondary Access Level

PAC Commands

A	Add Key
AC	Access Code
AL	Access Level
C	Clock Adjust
D	Door or PIN Reader
DC	Door Control
E	Edit Key
HE	Header
HP	Holiday Profile
HR	Holiday Period
I	Add/Delete Editor Key
INST	Install
K	Kill Transactions
L	Lock/Unlock Door
MR	Alarm Module Responses
MS	Alarm Module Sensors
N	Display Pins
P1	Print Personnel Data
P2	Print Door Data
P3	Print Access Codes
P4	Print System Status
P5	Print Transactions
P6	Print System Set Up
P7	Print Alarm Data
P8	Print Time Profiles
P9	Print Holiday Profiles
PR	Print Time Periods
RD	Reader Tamper
RE	Print Relay Outputs
SYSTEM START	
T	Time Profile
V	Void Key

1. Introduction

This document describes the front panel administration and is mainly of use on standalone systems (i.e. a master door controller with no PC) but it is also useful on PC-based systems where a portable front panel can be used for diagnostic purposes.

1.1 System Overview

The basic components of a PAC Access Control System are:

- Administration system.
- Door controllers.
- Readers.
- Alarm modules (optional).

The readers will detect the unique code in a key and pass it directly to the door controller. The door controller compares the code to the information stored in its memory and, if the key is valid, will operate the lock and send a report to the administration system. The administration system is the means by which the user programs the system (who is allowed where and when, etc.) and also where events are reported.

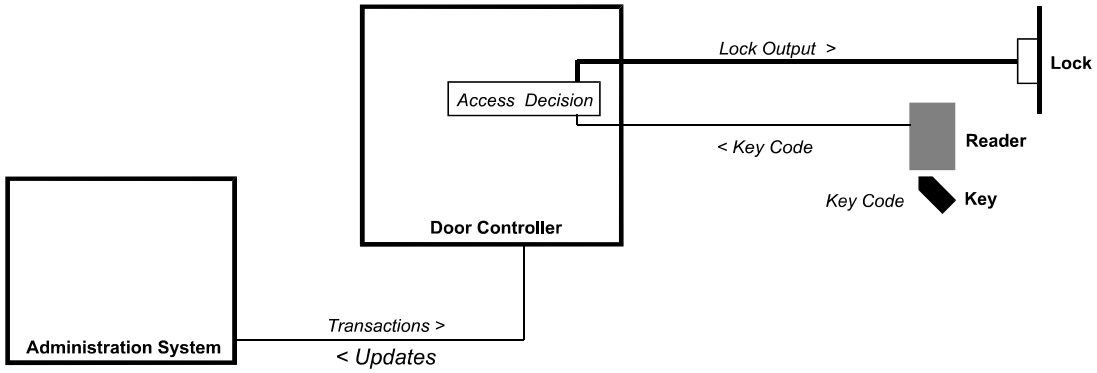


Figure 1 Components of a PAC Access Control System

In the case of the PAC 2244 and PAC 2222, the administration system is built in to the door controller and uses the keypad, display and reader on the front panel. As an option, a printer can be connected to the system that reports events as they happen, and can also produce listings of personnel, system set up, past events, etc.

1.1.1 Administration Systems

There are several ways of administering an access control system. Different methods allow greater numbers of doors or personnel to be controlled, and door controllers to be a greater difference from the central point. The administration systems fall into two broad categories:

- **Front panel administration**. This is covered by this document and is used for small systems (up to 16 doors) and all the programming is via the front panel attached to the controller.
- **Administration software.** This is a PC-based administration system used for larger systems or where more reporting features are required. For further details, see the documentation supplied with the administration software.

Note

At least one front panel is required for each system.

1.1.2 Door Controllers

The door controller is the heart of the access control system; its main functions are to:

- Decide whether a person has access at a particular door and at a particular time.
- Provide power to operate the lock.
- Monitor doors for unauthorised access or left open.
- Automatically open and close doors at certain times.
- Detect tamper conditions at the reader or its own case.
- Monitor any alarm modules that may be fitted for extra alarm inputs.
- Operate relays fitted on the door controller itself or on an alarm module.

The PAC 2244 can have 4 doors connected, the PAC 2222 can have 2 doors connected. In all other respects, both door controllers are identical.

What makes these door controllers so flexible is the ability to link controllers together to allow more than 4 doors to be administered. When programmed from the front panel, as described in this document, up to 16 doors can be controlled and up to 4000 personnel administered.

In all cases, one PAC 2200 Series Door Controller (e.g. PAC 2222 or PAC 2244) is the **master** controller, up to 3 further door controllers are **slaves**. All administration and reporting occurs at the master controller. Apart from some initial set up functions, **no** administration activity occurs at the slave controller.

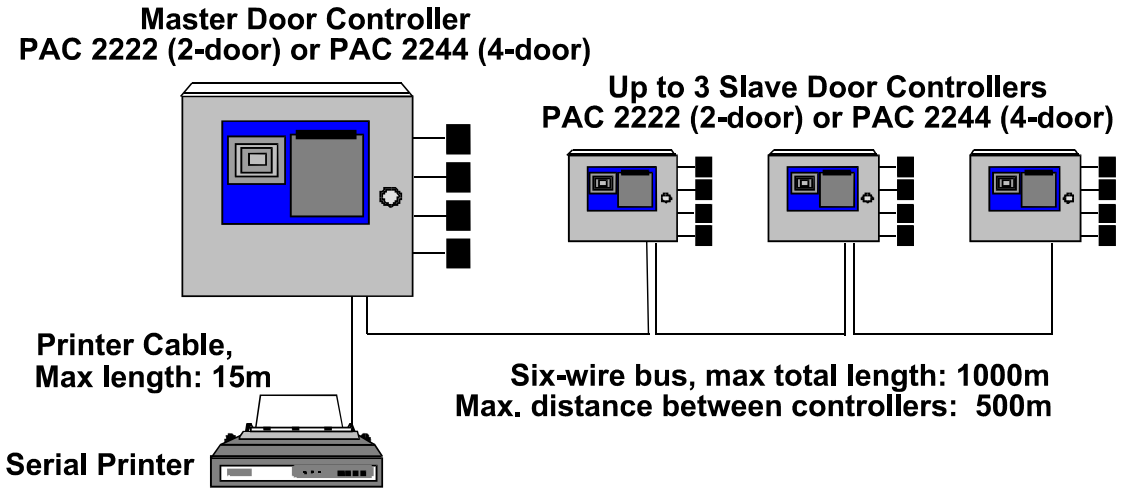

Master Door Controller
PAC 2222 (2-door) or PAC 2244 (4-door)
Up to 3 Slave Door Controllers
PAC 2222 (2-door) or PAC 2244 (4-door)
Printer Cable,
Max length: 15m
Six-wire bus, max total length: 1000m
Max. distance between controllers: 500m
Serial Printer

Figure 2 Connecting Door Controllers

1.1.3 Readers

A reader is a device, usually fitted close to the door that detects the unique code in a key and passes it to the door controller where the access decision is made. There are several types of reader suitable for different purposes and environments:

KeyPAC Readers

These readers read **KeyPAC** electronic keys and ISO thickness ID cards they **do not** read the earlier **PAC** ID devices. Make sure that you specify **KeyPAC** whenever you purchase electronic keys and ID cards.

PAC Reader

These readers read **PAC ID** electronic keys and ID cards. They **do not** read the newer **KeyPAC** electronic keys and ID cards. Make sure that you specify **PAC ID (not KeyPAC)** whenever you purchase electronic keys and ID cards.

PIN Readers

These readers require a PIN number to be entered as well as a key to be presented, as an

extra level of security. The need to use a PIN as well as a key can be controlled using a time profile.

Magstripe Readers

These readers convert the code in the magnetic stripe into a format recognisable by the door controller. The door controllers supports Magstripe cards which are encoded according to ISO 3554, Track 2.

Wiegand Readers

The door controllers supports the full range of Wiegand formats. Most Wiegand output devices will provide a sensor-compatible 26-bit output. If there is a choice, this format should be selected.

Automatic Vehicle Recognition (AVR)

This is a transmitter fitted to a vehicle that sends a unique code that is picked up by a buried loop aerial.

Request to Exit Switch

Sometimes a reader is used on both sides of a door, controlling both entry and exit from an area. Normally, however, a Request to Exit switch or button is used to open a door from the secure side. This switch is mounted close to the door and, when pressed, sends a signal to the door controller to release the lock. Of course, anyone can press the switch to open the door when leaving and no identity of the person can be recorded.

1.1.4 Alarm Modules

An alarm module is a PAC Alarm Module or PAC Alarm Event Manager (AEM). Alarm modules are optional devices that allow extra points (or zones) to be monitored and report alarms if activated. Each alarm module has 8 points that can be enabled and disabled manually or automatically at certain times.

The alarm modules also have 8 relay outputs (only 4 can be used on standalone systems) that can be activated by alarm inputs, system events such as door left open, or at certain times.

1.1.4.1 Alarm Event Manager and Relay Outputs

The Alarm Event Manager is an optional alarm module that can be attached to any reader channel. It can be fitted at any point in the cable between the door controller and reader. The alarm module has 8 inputs and 8 relay outputs **but relays 5 to 8 can only administrated via a PC**.

8 Monitored Inputs

Each alarm module can monitor up to 8 inputs and generate an alarm if any enabled input is activated.

Each input may be:

- Normally Open or Normally Closed (set on the module itself)
- Enabled/Disabled Manually
- Enabled/Disabled using a time profile
- Programmed to activate a relay.

8 Relay Outputs

The 8 relay outputs on the module may be activated by:

- A monitored input being activated.
- A system event.
- A time profile.

1.1.4.2 Identifying Modules, Inputs and Relays

Each reader channel on a door controller may have an alarm module connected. This means a maximum of 16 modules per system (four on each door controller, although only two on a PAC 2222).

Each alarm module has 8 possible inputs. These are numbered 1 to 8 on each alarm module. When reporting, however, the zone number, 1 to 128, is used. The zone number is as shown in the following table.

Location	**Zone Numbers** **Input Number:**							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Door Controller 1								
Alarm Module 1	1	2	3	4	5	6	7	8
Alarm Module 2	9	10	11	12	13	14	15	16
Alarm Module 3 *	17	18	19	20	21	22	23	24
Alarm Module 4 *	25	26	27	28	29	30	31	32
Door Controller 2								
Alarm Module 5	33	34	35	36	37	38	39	40
Alarm Module 6	41	42	43	44	45	46	47	48
Alarm Module 7 *	49	50	51	52	53	54	55	56
Alarm Module 8 *	57	58	59	60	61	62	63	64
Door Controller 3								
Alarm Module 9	65	66	67	68	69	70	71	72
Alarm Module 10	73	74	75	76	77	78	79	80
Alarm Module 11 *	81	82	83	84	85	86	87	88
Alarm Module 12 *	89	90	91	92	93	94	95	96
Door Controller 4								
Alarm Module 13	97	98	99	100	101	102	103	104
Alarm Module 14	105	106	107	108	109	110	111	112
Alarm Module 15 *	113	114	115	116	117	118	119	120
Alarm Module 16 *	121	122	123	124	25	26	127	128

* Not available on PAC 2222.

On a standalone system, each alarm module has 4 usable relay outputs, giving a maximum number of 16 on each door controller, or 64 on the whole system (assuming all door controllers are PAC 2244s). If the alarm module is being **administrated by via a PC,** 8 relay outputs can be used, giving a maximum number of 32 on each door controller, or 128 on the whole system (assuming all door controllers are PAC 2244s). In addition, the 4 relays on each door controller can be programmed in the same way as an alarm module relay but only if reader channel 4 **does not** have an alarm module connected.

1.1.4.3 Output Relays

There are three ways an output relay may be activated:

- By a monitored input being activated using the **MS** command (see Section 2.8.2). Each monitored input can be programmed to activate a relay on any alarm module connected to the same door controller.
- By a system event using the **RE** command (see Section 2.8.3). System events include Unauthorised Access, Door Left Open, Door Open, etc.
- By a time profile using the **RE** command (see Section 2.8.3). Each relay can be activated by a time profile.

1.1.4.4 Door Controller Relays

The 8 relays on each door controller each have a default action. The relays will operate according to these defaults, unless programmed to do otherwise.

Relay 1	Activated by invalid access on door 1
Relay 2	Activated by invalid access on door 2
Relay 3	Activated by invalid access on door 3
Relay 4	Activated by invalid access on door 4
Relay 5	Activated by an `Unauthorised Access` or `Anti-Tamper` alarms at any door on the door controller.
Relay 6	Activated by time profile 1
Relay 7	Activated by a `Door Left Open` event at any door.
Relay 8	Activated by `Case Tamper (T+, T-)` alarm.

Door controller relays are programmed as if they were on alarm module 4 therefore you cannot program relays on the door controller if an alarm module is present on channel 4 of the door controller.

1.2 Using the Front Panel

1.2.1 Master Key

The master key is created when the system is installed and configured. It can be changed by using the **INST** command - a command for which the master key is required, see *17263 PAC 2200 Series Controllers Installation Guide*.

If the master key is lost, a replacement can be programmed but only by performing a reset. This procedure is described in *17263 PAC 2200 Series Controller Installation Guide.* No data will be lost by this process but it can only be carried out by someone with access to the inside of the master door controller case.

The **master key is a special editor key** that can be used to issue all commands and is the only key able to create or modify other editor keys.

1.2.2 Editor Keys

In order to use the **Editor** mode to make changes to the system, a master key or editor key is required. An editor key is a normal key (or card) that is recognised by the door controller as allowing the keyholder to modify data held in the controller. Up to 32 editor keys may be specified, each with a different editor level. The editor level determines what commands a particular key can operate. In addition, each editor key can be given its own password. All editor keys, including the master key, are able to accept alarms either at the master or slave controllers (if used), whatever their editor level. For instance, a key with an editor level of 0 will **only** be able to accept alarms and be unable to issue any commands.

Note

All editor keys, including the master, are normal keys that can be used for gaining access. However, in order to be used for access control they still have to be added to the personnel list and given an access code. Likewise, removing an editor key will not have any effect on its use as a normal access key. The exception to this is when a system is initialised for the first time using the **SYSTEM START** command. In this case, the master key is added as key number 1 in the personnel file with an access code of 1, see *17263 PAC 2200 Series Controller Installation Guide*.

1.2.3 Editor Mode

The front panel is used to enter the **Editor** mode that is used for system administration. This uses the keypad, display and reader on the front panel of the door controller to administer keys, respond to alarms and configure the system. Up to 16 doors and 4000 keyholders can be administered using this system. An optional, highly recommended, printer output can be used for both continuous printing of events and production of various reports. Another option allows the monitoring of up to 128 extra alarm inputs.

Notes

1. Larger systems are administered using administration software on a PC.
2. Each system, whether administered from the front panel or a PC, needs at least one front panel for basic system administration - see *17263 PAC 2200 Series Controller Installation Guide.*

1.2.3.1 Using Editor Mode

Please read this section if you are unfamiliar with programming a door controller. It contains important information that will help you understand how the **Editor** mode works, what the different keys do, and how to make changes to different items. By reading this section you will find it easier to follow the more detailed descriptions of commands in later sections.

All programming of the access control system are made using **Editor** mode. The **Editor** mode consists of a set of commands issued by the user. Each command then allows the user to enter or modify various items, depending on the command. To gain access to the **Editor** mode and issue commands, present a master or editor key to the reader on the front panel.

A full description of editor keys, editor levels, passwords and administration is given in Section *2.9*.

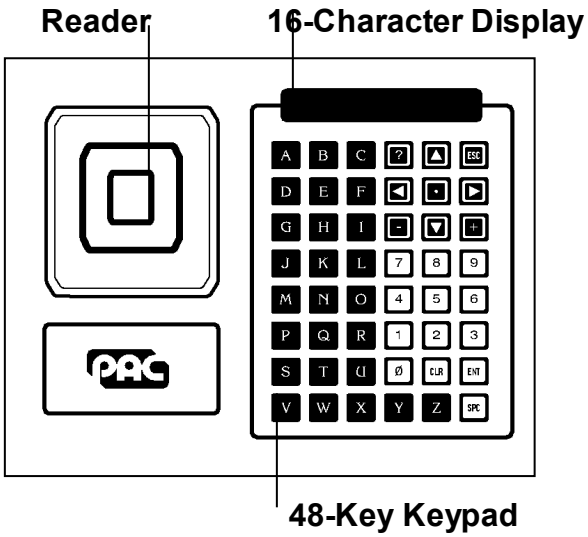


Figure 3 Front Panel

Note

If the front panel has a built in KeyPAC reader, the keypad will be blue text on a white background.

1.2.3.2 Entering Editor Mode

Present the editor key to the front panel reader. If the key is a valid editor key or the master key:

- If a password has been assigned to the key, the following prompt is displayed:

  ```
  PASSWD _
  ```

  Use the keypad to enter the password (maximum 8 characters) and press **ENT**. If the password is valid, the following prompt is displayed:

  ```
  CMD _
  ```

If the password, the following error message is displayed:

```
INVALID PASSWORD
```

and be returned to a blank screen. Present the key and try again. If it still does not work, ask the person responsible for the system to check your password.

- If no password has been assigned to the key, the following prompt will be displayed:

```
CMD _
```

- If the key presented is **not** a master or editor key, the following message is displayed:

```
T
```

This indicates that a key has been presented, but is not recognised as an editor key.

Note

No alarm conditions will be reported while you are in **Editor** mode, nor will any transactions be printed. When you leave **Editor** mode, any alarms that occurred will be reported and all the transactions will be printed. Door controller or alarm module relays **will** operate during **Editor** mode.

Command Prompt, CMD

The starting point for any operation within the **Editor** mode is the CMD prompt:

```
CMD _
```

A command can now be entered to alter the information stored in the door controller (e.g. add or delete personnel) or initiating an action (e.g. perform a manual unlock).

Editor Levels

The commands allowed are determined by the editor level. This is set by the person responsible for issuing editor keys. If a command is not allowed, the following message is displayed:

```
INVALID ED LEVEL
```

and then the CMD prompt.

Editor Time-Out

Once in **Editor** mode, if no key is pressed for 3 minutes, the mode will time-out. The key must be presented again to return to the **Editor** mode. This means the system cannot be left in **Editor** mode.

1.2.3.3 Leaving Editor Mode

Once you are in the **Editor** mode, press the **ESC** key at the CMD prompt to leave and return the door controller to its normal operation. Any alarm conditions that occurred while in **Editor** mode will now be reported. Also, if a printer is connected, any transactions that have occurred while in **Editor** mode will now be printed.

1.2.4 Front Panel Keyboard

The keys on the front panel keypad can be grouped into several categories depending on their function.

1.2.4.1 ? Key

Outside the Editor

This is the only key that operates outside **Editor** mode and on slave door controllers. When pressed, it will produce a display similar to:

```
2244 M0  V1-50
```

`2244 or 2222` refers to the door controller type, either PAC 2244 or PAC 2222.

`M0` is the system type. This will be *M0* for the master door controller or *M3* for a

slave.

`V1-50` is the software version number. You may need to know this if requesting help about the system.

Inside the Editor

In the **Editor** mode the **?** key provides extra help. For instance, at the `CMD` prompt, pressing **?** displays:

```
ENTER COMMAND
```

This display lasts about 3 seconds before returning to the current prompt. Press **?** at any time if in doubt about what is required.

1.2.4.2 ESC Key

The **ESC** key is used to leave the current operation and go back to the previous step. For instance, pressing **ESC** while editing data will display the `CMD` prompt.

1.2.4.3 Navigation Keys

Moving within a Database

Most commands allow the database, or table, to be edited. Each database has several rows, or **records**, consisting of several columns, or **fields**. When a command is entered, the first field of the first record or, if you prefer, the top left-hand corner of the table is displayed. Use the navigation keys on the keyboard to move this 'window' around the table.

⇧⇩ Use the up and down keys to move from one record to another. Usually there will be an indication of the current record; however, some fields may not have room to display a record number as well as their value.
When displaying record 1, the up arrow will have no action; on the last record, the number will vary from one database to another, the down arrow will have no action.

- + Use the minus (-) and plus (**+**) keys to move from field to field across a record. When displaying the leftmost field the minus key has no action; on the rightmost field, the **+** key has no action. If moving up or down using the arrow keys, the same field is retained but the record above or below is displayed.

- **FastFind** The dot on the centre of the arrow keys is the **FastFind** button. In most commands, if pressed the following prompt is displayed:

  ```
  FIND _
  ```

  Enter a record number and press **ENT**, to move directly to that record. If a number larger than the number of records is entered, the last record in the database is displayed.

  The **Void Personnel** (**V**) and **Edit Personnel** (**E**) commands give the prompt:

  ```
  ID  _
  ```

  In this case, there are three choices for searching:

  1. Enter the record number and press **ENT**.
  2. Type the exact 12-character ID (if used) and press **ENT**
     If the ID is not known, the following message is dispayed:

     ```
     UNKNOWN NAME
     ```

     and be returned to the `ID` prompt.
  3. Present a key to the front panel reader.
     If the key is not known, the following message is displayed:

     ```
     NOT IN DATABASE
     ```

     and be returned to the `ID` prompt.

  FastFind in printer commands. In the printer commands (**P1-P9**), the **FastFind** button is used to initiate printing. See Section 3.3.

1.2.4.4 Editor Example

The following example shows the **Personnel** database as seen when the **Edit** (**E**) command is used. The highlighted box shows the first item that will appear in the screen. Use the keys shown to move the 'window' around the database. Use the **FastFind** button (•) to go directly to a particular record.

	- Left		Right +
	ID 1 AC 1	WHO _	ID 1 HOLS 0
Up ⇧	ID 2 AC 0	WHO _	ID 2 HOLS 0
	ID 3 AC 0	WHO _	ID 3 HOLS 0
Down ⇩	ID 3999 AC 0	WHO _	ID 3999 HOLS 0
	ID 4000 AC 0	WHO _	ID 4000 HOLS 0

1.2.4.5 Alphanumeric Keys

These are the keys A-Z, 0-9 and **SPC**, which take up most of the keyboard. Use these for entering names or values when prompted. Normally the characters (**A**-**Z** or **SPC**) are not allowed when a numeric value, such as an access code or lock release time is required.

IMPORTANT

When entering any name or value, always press **ENT** before moving on to the next prompt. If **ENT** is not pressed, the name or value entered will be lost and the contents of the field will revert to their previous value.

1.2.4.6 Making Changes

When a field is visible on the screen, the flashing underline cursor will appear on the first character. The cursor is always positioned on the next character to be changed. Use the following keys to move and alter the display:

⇦ ⇨ The left and right arrow keys move the cursor to the left and right within the field. The cursor always starts on the leftmost character of the field and returns to that position when you press **ENT**.

CLR The **CLR** (clear) key will blank out the existing value. This is convenient especially when changing long names. **CLR** followed by **ENT** will set numeric values to 0 and alphabetic values set to all spaces.

The next example shows how to make changes to items. Most data items fall into 3 different categories.

Alphabetic Data

These are names given to personnel, editors, doors, etc. Use any of the alphanumeric characters (**A**-**Z**, **0**-**9**) including **SPC** (space).

Example

ID DOOR 1	Selected a field to change and use the alphanumeric keys to enter a new value. The **cursor**, a flashing underline, marks the character that will be overwritten by the next key press.
ID FOOR 1	When a valid key is pressed, the new character will appear on the screen and the cursor will move to the next position.

Continue entering characters until the entry is complete.
Use the ⇦ and ⇨ keys to move the cursor within the field.
Press **ENT**.

IMPORTANT

Press **ENT** to save the new entry. If not, moving to the next field or pressing **ESC** will be lose the new entry.

Numeric Data

These are values or codes such as lock release time, access code, etc. In this case, only enter numbers (**0**-**9**). Each type of entry will have a maximum and minimum value. If a value outside the range is entered, the value will be adjusted to the nearest allowed, e.g. the maximum value for a lock release time is 255 seconds, if 300 is entered, the value will change to 255 when **ENT** is pressed.

Example

Selected a field to change and use the numeric keys to enter a new value.
The **cursor**, a flashing underline, marks the character that will be overwritten by the next key press.

When a valid key is pressed, the new character will appear on the screen and the cursor will move to the next position.

Continue entering characters until you have completed the entry.
Use the ⇦ and ⇨ keys to move the cursor within the field.

Press **ENT**.

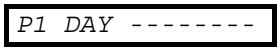
IMPORTANT

Press **ENT** to save the new entry. If not, moving to the next field or pressing **ESC** will be lose the new entry.

Data Options

These are special fields that allow various options to be set, such as days of the week to which time periods apply, lock mode options, etc.

Example



No cursor appears in this type of field. In order to make changes, press the number corresponding to the option to change. In this example, time period days (**PR** command) are shown.

To select a day, press the corresponding number to the day of the week, Mon=1, Tues=2, etc. To deselect an option, press the number again.

Press **ENT**.

IMPORTANT

Press **ENT** to save the new entry. If not, moving to the next field or pressing **ESC** will be lose the new entry.

There are other types of entry, such as date, time, locking/unlocking doors, but these will be described in detail in the relevant sections.

1.3 Controlling Access

Each key that is issued will allow the keyholder access through certain doors at certain times. The information for controlling access is held in a **Personnel** database.

1.3.1 Identifying Personnel

There are two ways in which individual keyholders can be identified within the system. The first is to use an automatically generated ID number, between 1 and 4000. The second method allows the operator to give a name of up to 12 characters to each keyholder.

Note

Decide before starting which method will be used. The system has to be set up to use one method or the other. Although this can be changed later without losing information, it is not recommended.

4-Digit Number

The main advantage of this method is speed of entry because a different name for every key that is issued is not required. The disadvantage is that all references within the system, including printed reports, are to the 4-digit number. This can make identification of keyholders difficult as hard copy records will have to be consulted. Also number selection is not possible because the number that is issued will always be the first free number. For instance, if 120 keys have been issued, they will be automatically identified as 0001 to 0120 when added. If any are deleted (e.g. 25 and 42) the next keys issued would be identified as 0025 then 0042 followed by 0121, 0122 and so on.

If you use this method, it is vital to keep an accurate record of the 4-digit ID issued to each key and to whom the key is issued. If a keyholder loses a key, the record is necessary to determine which key to delete.

12-Character Name

A better method, and easier to administer once all the keys are issued, is to use the 12-character name. In this case whenever a key is issue, enter a unique name. The name may consist of up to 12 characters using **A**-**Z, 0**-**9** and space (**SPC** on the keypad). Names should not start with a space or a number. You will probably use the keyholder's name and initials (e.g. *SMITH AB* or *JONES SL*) or any appropriate naming system (e.g. payroll or employee numbers). Names **must** be unique and a warning is given if a duplicate name is entered.

Token Code

This is the unique code stored in each key. It is written permanently into the key during manufacture and never changes. In routine use, this code is not entered. However, there are some occasions on which it can be used. One of these is the adding of keys without physically being in possession of the key. This may come about if one or more keys are accidentally removed from the system and it may not be possible or convenient to recall the keys from the keyholders. If a record has been kept of the token codes of all keys, these can be entered instead of presenting the key itself. The personnel printout (**P1** command) contains the token code of each key and is an ideal record for such purposes.

Another occasion when a key code can be entered is when adding vehicle transmitters to the system. If using PAC's Automatic Vehicle Recognition (AVR) system, each transmitter is supplied with a 10-character code. Use this code (ignoring the first 2 characters) in the **A** command instead of presenting a key to the front panel reader.

1.3.2 Access Codes

The door controller has space for storing 4000 keys. The access that a key is allowed is determined by assigning it an access code. When adding a key, the access code required by the key must be known.

This **access code** is created by combining **access levels** (**where** a person has access) and **time profiles** (**when** a person has access).

An additional feature allows you to apply a **holiday profile** to a keyholder. This is a range of dates during which they will be denied access at times their access code would normally allow.

IMPORTANT

In order to administer the system efficiently, it is essential that careful records of access codes, access levels, time profiles and time periods are kept.

Time profiles, which can be used to control other functions in the system as well as keyholder access, are described in detail in Section 1.3.2.1.

1.3.2.1 Access Code Overview

An access code determines through which doors and at what times a key is allowed access.

Each access code has two sets of doors (access levels) both of which may have a time profile attached.

Example

An access code can be set up that allows keyholders through certain doors 24 hours a day but into other areas only during normal working hours (e.g. 9:00am to 5:00pm, Monday to Friday).

In this case, create an access level consisting of all the doors with no time restriction and another access level containing the doors where access is restricted to working hours. A time profile will then be needed covering the time restriction, in this example 9:00 to 5:00, Monday to Friday.

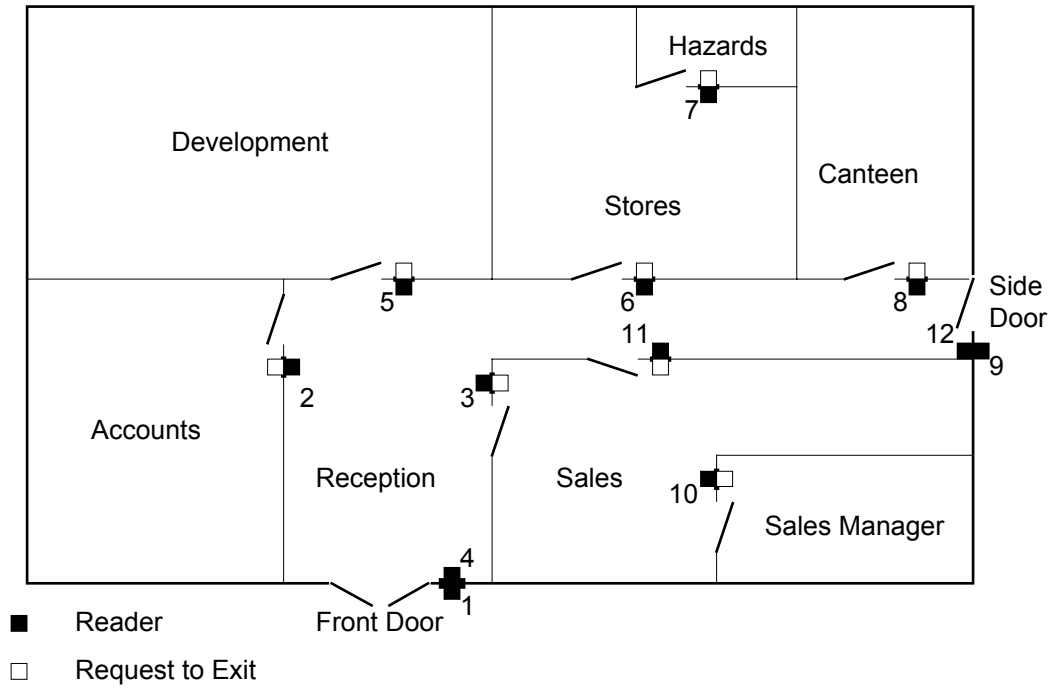


Figure 4 Sample System Layout

Figure 4 will be used as a model in several examples.

1.3.2.2 Organising Access Codes

The best approach to organising access codes is to consider all the different groups of people who may require access within the system. A group of people for access purposes should consist of those people who will all have the same access requirements. For instance:

- The sales department may consist of sales office staff who have access to the sales office, but not the sales manager's office. Other sales office staff will have access to the manager's office. This arrangement therefore requires at least two groups of staff who would be given different access codes.
- Cleaners who require access everywhere (except hazards) between 5:00pm and 7:30pm, Monday to Friday.
- Senior managers may require access to all areas at all times.
- Development staff may need access to their area only at all times but to the rest of the building only during normal working hours.

1.3.2.3 Creating Access Codes

To create access codes for a group of people you should follow these steps:

1. Decide which doors the group will be allowed through.
2. Decide at what times they will have access through these doors. If necessary, have two lists of doors (**access levels**) in one access code, one allowing access on one **Time Profile**, the second allowing access at a different **Time Profile**.
3. Check to see if appropriate access levels and time profiles are already set up. If not, create new ones (the **A, PR** and **T** commands).

1.3.3 Time Profiles

Time profiles are used to control several features of the system as well as controlling keyholder access. There are up to 128 time profiles available within the system. It is recommended that individual time profiles are set up specifically for controlling keyholder access. For instance, have a time profile that automatically unlocks the front door between 9:00am and 5:00pm, Monday to Friday, for public access. Although tempting to use the same time profile when limiting access of keyholders to an area for the same time period, if in the future it is required to alter the keyholder access times, the door opening times may be changed without realising it.

Note

If there is no intention of placing time restrictions on keyholder access, there is no need to use time profiles at all. If no time profiles are used, keyholders will be allowed 24 hour, 7 day access through doors that their access code allows.

Time profiles are a powerful tool that have several functions within the access control system:

- Restricting the access of personnel as part of their access code.
- Automatically opening and closing doors.
- Automatically enabling an additional alarm point (alarm module).
- Automatically switching a relay on the door controller or a alarm module.
- Switching a PIN reader between key plus PIN and key only.

Examples

1. A public access door through which anybody can pass between 9:00am and 5:00pm, Monday to Friday, but outside these hours a key is required.
2. Some staff are only allowed access between 8:30am and 5:30pm, Monday to Friday; 8:30am to 12:00pm Saturday.
3. Cleaners are allowed access only between 7:00am and 9:00am Monday to Saturday.
4. Shift workers can gain access between 8:00pm and 6:00am Monday to Friday.

Note

If time controls of any type are not needed, there is no need to set up any time profiles at

all, just use a time profile of 0.

1.3.3.1 How Time Profiles Work

There are 128 different time profiles. Each time profile consists of up to three time periods. A time period consists of a start time, an end time and the days of the week to which it applies. For instance, example 1 requires just one time period, 9:00am (start time) to 5:00pm (end time), Monday to Friday (days of the week); example 2 requires two time periods, 8:30am to 5:30pm Monday to Friday plus 8:30am to 12:00pm Saturday only.

Up to 32 different time periods can be defined, and either one, two or three of these time periods can be used to create one of 128 time profiles. A time period may appear in more than one time profile.

IMPORTANT

1. The time profile is **active** from the **beginning** of the first minute of each time period until the **end** of the final minute of each time period on the days of the week to which it applies. That is, in example 1 for instance, start time change is from 8:59 to 9:00 and end time change is from 5:00pm to 5:01pm.
2. If the holiday option is **set** for a time period, the time profile will **not** be active on any days contained in holiday profile 1.
3. Holiday settings do not affect time periods that already running when the holiday date becomes current. This applies mainly to periods that span midnight. This is an important feature that allows workers to leave the building at the end of their shift without being prevented from doing so by a holiday setting.

The following table describes the effect that a time profile has when applied to the functions it may control.

Function	Command	Active	Inactive
Access Code	**AC**	Access allowed	No Access
Doors	**D**	Door unlocked, free access.	Door locked, key required
Alarm Module Inputs	**MR**	Disabled, no event when activated.	Enabled, alarm event when activated.
Relay Outputs	**RE**	Relay is set	Relay is not set
PIN Reader	**D**	Key only required.	Key plus PIN required

Tips

1. Use different time profiles for different functions even if they are identical. This means that if a change is required to one function at a later date, these can be achieved without affecting the other functions.
2. When using time profiles, it is important to check the time and date at regular intervals, say once a month, to ensure that the system operates accurately. See Section 2.1.

Time Profile Status Switch

In addition to the 3 time periods, each time profile has a status setting, either ON or OFF. Normally if a time profile is being used, its status will be ON. However when the status is switched OFF, the effect depends on the application:

- **Access Codes.** A time profile that is switched OFF will lock out **all** personnel with that profile as part of their access code, until the time profile status is switched back ON.
- **Doors.** A time profile that is switched OFF will stop the door automatically opening. It will also lock a door that is currently open according to that time profile.
- **Alarm Inputs.** A time profile that is switched OFF will prevent the input being automatically isolated. It will also enable all inputs that are currently isolated according to that time profile.
- **Relays.** A time profile that is switched OFF will prevent any relays, either on door controllers or alarm modules, assigned that time profile from operating. It will also reset any relays that are currently set according to the time profile.

- **PIN Reader** A time profile that is switched OFF will require keyholders to present their keys **and** enter their PIN at a PIN reader assigned that time profile.

1.3.3.2 Time Profile Examples

Note

Time periods are defined using the 24-hour clock, where, for example, midnight is 00:00, noon is 12:00 and six o'clock in the evening is 18:00.

The examples given here are typical of the types of application for which a time profile is used. All the example time profiles are set up by using the following time periods:

	Start Time	End Time	Days
1	08:45	17:30	MTWTF--H
2	08:45	13:30	-----S-H
3	18:00	23:59	MTWTF--H
4	00:00	06:00	-TWTFS--
5	00:00	00:00	--------
6	00:00	00:00	--------
7	09:00	17:00	MTWTF--H
8	00:00	23:59	-----SS-

1. A group of people require access to an area during working hours only. In this case, working hours are 9:00am to 5:00pm Monday to Friday and 9:00am to 1:00pm Saturday. They will not be allowed access on public holidays if these fall on week days. Notice that some extra time is allowed at the start and end of the period to allow people to arrive early and leave late.

	Period			
1:	1	08:45	17:30	MTWTF--H
2:	2	08:45	13:30	-----S-H
3:	0			

2. A public entrance door needs to be unlocked during office hours but not on public holidays. Unlike the example 1, there is no 'spare' time at the start and end of the period.

	Period			
1:	7	09:00	17:00	MTWTF--H
2:	0			
3:	0			

3. Shift workers need access to an area between 6:00pm and 6:00am Monday to Friday.

	Period			
1:	3	18:00	06:00	MTWTF---
2:	0			
3:	0			

Note

Because the period starts on Friday, it is not necessary to set the “SATURDAY” option. It is also not necessary to define two separate time periods. You may need to be careful whether you allow access on public holidays in these cases as a 'normal' working day may start or finish on a holiday.

1.3.4 Holiday Periods and Profiles

Holiday periods and profiles are defined using the **HR** and **HP** commands (see Sections 2.2.1 and 2.2.2) and are applied to a key using the **Edit** (**E**) command (see Section 2.10.2).

1.3.5 Residential Systems

Although the examples given concentrate on a commercial type of system, the principles apply equally to residential systems.

Generally speaking, residential systems have less complex access requirements. Residents will usually be given an access code that allows them access to their dwelling only, with no time restriction. Separate access codes will therefore be created for each block or landing, depending on where the readers are located.

Other non-residents will probably need access, for instance, deliveries, cleaners, maintenance etc. either 24 hours a day, or at restricted times.

2. Programming the Controller

Installation, configuration, commissioning and testing is described in *17273 PAC 2200 Series Controllers Installation Guide*. As part of the testing, programming the readers and locks is performed. On PC-based systems, programming of the controller is performed via the PC (see the documentation supplied with the administration software). For a standalone access control system, the front panel commands are used to complete the programming of the controller.

This section gives detailed descriptions of each front panel command. The commands are in the order required when first programming a controller but these commands can be used at anytime to update the controller's data by presenting a master or editor key.

2.1 Clock - C Command

Once set at installation, the door controller will maintain its time using a battery backed real-time clock. Check the clock regularly to ensure accuracy. This is particularly important if time profiles for controlling system functions and access are used.

Summertime (or Daylight Saving Time)

Adjust the clock twice a year when the clocks go back (Autumn) and forward (Spring).

Date Format

The date format is set using the **INST** command, see *17263 PAC 2200 Series Controllers Installation Guide*. Three formats are possible, using 23rd January 2002 as an example:

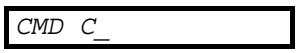
0	23-01-02 (day-month-year)	The default, European style.
1	01-23-02 (month-day-year)	US style
2	02-01-23 (year-month-day)	Japanese/Scandinavian style.

To check the date and time:

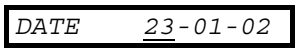
Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed



Type C and press **ENT**.



Type the new date over the existing date, or use the left and right arrow keys to move the cursor to the figures you want to change.

Notes

1. The cursor moves over the separator character (-) to the next digit.
2. If **CLR** is pressed, re-enter the time with a space between the hours and minutes.

Press **ENT** when complete.

If the date is invalid, it will be adjusted to the nearest valid date.

Press **+**.

Type MON, TUE, WED, THU, FRI, SAT or SUN.

If one of the above 3-character names is not entered, the display will default to MON.

Press **ENT** and **+**.

ENTER TIME 16-01

Type the new time over the existing time, or use the left and right arrow keys to move the cursor to the figures to change. Note that the cursor moves over the separator character (**-**) to the next digit.

Notes

1. The cursor moves over the separator character (-) to the next digit.
2. If **CLR** is pressed, re-enter the time with a space between the hours and minutes.

Press **ENT** when complete.

If the time is invalid, it will be adjusted to the nearest valid time.

Press **ESC.**

2.2 Holiday Periods and Profiles - HR and HP Commands

2.2.1 HR Command - Holiday Periods

There are 254 possible holiday periods. Each consists of a start date and duration**.** The duration includes the start date itself. For instance, if a holiday period is for Christmas Day and Boxing Day, enter a start date of 25/12/02 and a duration of 2 days. For example, for a single day, enter the start date 4/7/02 and duration 1 day.

To create a holiday period:

Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The `CMD` prompt is displayed.

```
CMD HR_
```

Type `HR` and press **ENT**.

```
ST 1   00-00-00
```

Use the up and down arrow keys or **FastFind** (•) to select the holiday period to change.

```
ST 5   00-00-00
```

Holiday Period Start Date

Type the start date. The cursor will 'jump' over the separator characters as the date is entered.

Press **ENT** and **+**.

```
DURATION 1    0
```

Holiday Period Duration

Enter the numbers of days the period will last.

Press **ENT** and **ESC**.

2.2.2 HP Command - Holiday Profiles

The door controllers allow the setting up of 24 different holiday profiles. Each holiday profile consists of up to 20 holiday periods, a holiday period being a start date and duration. Up to 254 holiday periods can be defined on a standalone system.

Once a holiday period been defined, it can be applied to any keyholder using the **E** command (see Section 2.10.2). When a holiday profile is active, any keyholder assigned the holiday profile will not gain access and a `No Access: Holiday` event will be recorded.

Up to 20 holiday periods can be assigned to a holiday profile. A total of 24 holiday profiles are available. Holiday profile1 has a special purpose (i.e. system holidays).

2.2.2.1 System Holidays

Holiday profile 1 is a special case. It contains all the holiday periods that can be used to override time profiles. This means that, for instance a door that automatically opens during office hours, Monday to Friday, will **not** open on holidays that may fall during the week, such as public holidays, Christmas Day. Likewise, a person allowed into a building during the week can be prevented from gaining access on such days.

For this reason, refrain from using holiday profile 1 for keyholder use and reserve it for system holiday use only.

One technique for maintaining system holidays would be to assign holiday periods 1 to 20 to holiday profile 1. Then assign known dates and durations to those holiday periods. Once a year, enter all the known holidays for the following year or so. Using this method, it is only necessary to replace holiday periods that have passed with holidays in the future.

2.2.2.2 Using the HP Command

Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD HP_
```

Type HP and press **ENT**.

```
HOL 1  ON/OFF N
```

Use the up and down arrow keys or **FastFind** (•) to select the holiday profile to change.

```
HOL 1  ON/OFF N
```

Holiday Profile Active

Type Y to make the profile active, N to deactivate it. If a profile is deactivated, any restrictions that were in force will be removed.

Press **ENT** and **+**.

```
HOL 1  PR 1  0
```

Holiday Period

Type the holiday period.

There are 20 fields that can be entered, press **+** to go to the next period.

Press **ESC** to return to the CMD prompt.

2.3 Time Periods and Profiles - PR and T Commands

2.3.1 PR Command - Time Periods

The first step in creating time profiles is to make sure the time periods that you require are defined.

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD PR_
```

Type PR and press **ENT**.

```
P1  START 00-00
```

Use the up and down arrow keys or **FastFind** (•) to select the time period you want to change.

```
P1  START 00-00
```

Period Start

Using the 24-hour clock, enter the start time of the period.

Press **ENT** and **+**.

```
P1  END   00-00
```

Period End

Using the 24-hour clock, enter the end time of the period.

Press **ENT** and **+**.

```
P1 DAY --------
```

Days of the Week

This is an option field. To make the time period active on a particular day of the week, type a number as follows:
1 Mon, 2 Tue, 3 Wed, 4 Thu, 5 Fri, 6 Sat, 7 Sun, 8 Hol

When you press a number, the initial letter of the day will appear. To deselect a day, press its number again, a dash will appear at that day.

The holiday option 8 indicates that this time period will **not** be active on a system holiday.

Press **ESC** to return to the CMD prompt.

2.3.2 T Command - Time Profiles

Before creating a time profile, ensure that the time periods required have already been set, see Section 2.3.1.

Using the T Command

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD T_
```

Type T and press **ENT**.

```
TP 1    ON    Y
```

Use the up and down arrow keys or **FastFind** (•) to select the time profile you want to change.

```
TP 1    ON    N
```

Time Profile Status

See the description in Section 1.3.3.1 , to understand the significance of this setting.

Type Y to switch the time profile ON, Type N to switch the time profile OFF.

Press **ENT** and **+**.

TP 1 PER 1 0

First Time Period

Enter the first time period number (0-32). Enter 0 if you do not need this time period.

Press **ENT** and **+**.

TP 1 PER 2 0

Second Time Period

Enter the second time period number (0-32). Enter 0 if you do not need this time period.

Press **ENT** and **+**.

TP 1 PER 3 0

Third Time Period

Enter the third time period number (0-32). Enter 0if you do not need this time period.

Press **ENT** and **+**.

2.4 Access Levels and Codes - AL and AC Commands

Use the **AL** command to set access levels, the **PR** and **T** command to set up time profiles (see Section 2.3 if required), and the **AC** command to combine these into access codes.

2.4.1 AL Command - Access Levels

An access level is a list of doors used to define which doors different people, or groups of people, are allowed to use. There are 128 possible access levels.

Note

In a new system, access level 1 has been automatically set to all doors. That is, an access code which contains access level 1 will allow the keyholder through all the doors in the system.

Before attempting to use this command, be aware of the numbers assigned to each door. In the example given in Figure 4 for instance, door 1 is the front door, door 3 is the sales office (from reception), door 11 is the sales office from the corridor, door 4 and door 12 are exit doors.

The table below shows which doors are associated with which door controller.

Door Controller	Door Numbers
Master	1 2 3* 4*
Slave 2	5 6 7* 8*
Slave 3	9 10 11* 12*
Slave 4	13 14 15* 16*

* Not available on PAC 2222

In order to show all the settings for 16 doors in each access level, the display has to be split into two halves. Use the **+** and **-** keys to move between the two displays.

To create or alter an access level:

Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD AL_
```

Type AL and press **ENT**.

```
L 1  1 12345678
```

The first 8 doors of access level 1 are displayed. The 1 in the centre of the display indicates this is the first half of the display (doors 1-8).
Press **+** to see the second set of 8 doors.

```
L 1  2 12345678
```

The 2 indicates this is the second set of 8 doors (9-16).

In this example, access level 1 allows access through all the possible doors in the system.

Use the up and down arrow keys or **FastFind** (•) to select the access level to change.

```
L 17 1 12----78
```

Select or deselect doors by typing the numbers 1-8. If a door is selected, its number will appear on the list; if it is deselected, a dash (-) will replace the number.

```
L 17 2 ----56--
```

Press **ENT** to save any changes you have made. Press **+** to see the second set of 8 doors (9-16). Press **ENT** again to save any changes you have made to the second set.

The example shows an access level (number 17) that allows keyholders through doors 1, 2, 7, 8, 13 and 14.

Select another access level to change or press **ESC** to return to the CMD prompt.

2.4.2 AC Command - Access Codes

Access codes are used to combine **where** a person has access (access levels) and **when** (time profiles).

Each code has a primary access level and time profile plus a secondary access level and time profile. This allows access to be given to one set of doors at one time, and another set of doors at another time. If no time profiles are assigned, the keyholders will have access at all times.

Examples

1. The simplest example allows keyholders with this code access everywhere at all times. In a system that has just been initialised, this is the case for access code 1.

   Primary Access Level: 1 Access Level 1:`12345678 12345678`
   Primary Time Profile: 0

   Secondary Access Level: 0
   Secondary Time Profile: 0

2. The next example allows keyholders through the front and side doors at all times but only into the sales office, accounts and the canteen between 8:30am and 6:00pm Mon-Fri, 8:30am and 1:00pm Sat.

   Primary Access Level: 7 Access Level 7:`1--4---- 1--4----`
   Primary Time Profile: 0

   Secondary Access Level: 8 Access Level 8: `-23----8 --3-----`
   Secondary Time Profile: 3 Time Profile 3: `08:30-18:00 MTWTF--H`
   `08:30-13:00 -----S-H`

3. This example may be used to allow cleaners access early in the morning.

   Primary Access Level: 9 Access Level 9:`123456-8 1234----`
   Primary Time Profile: 5 Time Profile 5:`07:00-09:30 MTWTF--H`

   Secondary Access Level: 0
   Secondary Time Profile: 0

4. The stores manager needs access to the building and stores but is only allowed into other areas during office hours.

   Primary Access Level: 11 Access Level 11: `1--4-678 1--4----`
   Primary Time Profile: 0

   Secondary Access Level: 12 Access Level 12: `12345678 1-34----`
   Secondary Time Profile: 3 Time Profile 3: `08:30-18:00 MTWTF--H`
   `08:30-13:00 -----S-H`

Note

Quite often access levels or time profiles will overlap. For instance, the primary access level may not allow access but the secondary access level will. In these cases, if **either** access level allows the keyholder access, the door will open.

To set access codes:

At this point, the access levels and time profiles, if any, to be to used should be known.

Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The `CMD` prompt is displayed.

```
CMD AC_
```

Type `AC` and press **ENT**.

```
AC 1    PAL  1
```

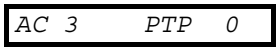
The primary access level for access code 1 is displayed.

Use the up and down arrow keys or **FastFind** (•) to select the access code you want to change.

Primary Access Level

Once you have selected the access code you want to use (e.g. 3), type the primary access level (0-128).

Press **ENT** and **+**.



Primary Time Profile

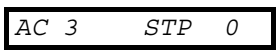
Type the time profile to apply to the primary access level.
For no time restriction, type `0`.

Press **ENT** and **+**.

Secondary Access Level

Type the secondary access level (0-128).

Press **ENT** and **+**.



Secondary Time Profile

Enter the time profile to apply to the secondary access level. For no time restriction, enter `0`.

Press **ENT** and **ESC**.

2.5 Door Control- DC Command

This command sets up lock sharing (two readers sharing the same lock output) and anti-passback.

2.5.1 Local Anti-Passback

Local anti-passback is a feature that prevents a key being used to enter an area until it has also been used to leave the area. This will stop keyholders passing their keys to others to gain entry.

Local anti-passback can only operate between the doors on one controller. On a PAC 2244 doors 1 and 2 can be used as entry doors, doors 3 and 4 as exit doors. On a PAC 2222, door 1 is the entry door, door 2 the exit door.

When the local anti-passback facility is enabled, a keyholder may enter an area through an entry door. If the same key is used again at an entry door, a `No Entry: Passback` transaction is produced and the lock will not operate. Access will continue to be denied until the key has been used at an exit reader.

Note

If door contact monitoring is used, users will only be registered in/out of an area when the door is opened after presenting their key, Presentation of a key without opening the door will not change whether a user has entered/left an area.

Timed Anti-Passback

This is where a time period is set and the anti-passback is “cleared”. The key can then be used again.

Anti-Passback on Exit

Anti-passback can also be set on exit. This will prevent a key leaving an area unless it has entered the area. Timed anti-passback will also operate on exit (see Section 2.5.3).

2.5.2 Global Anti-Passback

Global anti-passback is only available on cluster sites. It is **not** available on the standalone system and it will not work with CNC six wire bus or dataswitch sites.

Up to seven areas per cluster can be programmed via a PC. Each area for which global anti-passback is to be in operation must be specified via a PC by defining the entry readers into the area. Further information is given in the documentation supplied with the administration software.

2.5.3 Timed Anti-Passback

Note

Timed anti-passback works with both local and global anti-passback.

The period for which a key is denied access can be limited by entering a time period. After the expiry of this time, a key will be allowed access again even if it has not been used to leave the area. The time may be set to between 10 and 70 minutes in 5 minute steps (10, 15, 20, etc.).

Using the time-out period means anti-passback can be used without an exit reader. A car park, for instance, may have an entry barrier with a reader. When a key is used to raise the barrier, that key will not be able to gain access again until the time period expires. Provided that genuine use of the key is unlikely to be needed within the time period, no exit reader is required.

2.5.4 Lock Sharing

Note

Only applicable when using Magstripe or Wiegand output. It **can** be used with other readers but is generally not needed as the PAC 2200 Series Controllers allows in and out readers on one channel.

This feature allows a single lock output to be controlled by two separate reader channels. Normally this is the case when two readers are being used, one each side of the door, controlling both entry and exit.

When sharing is set for:

	Reader Channel	Operates	Direction	Transaction
Channels 1&4	Channel 1	Lock 1	IN	Entry Authorised
Channels 2&3	Channel 2	Lock 2	IN	Entry Authorised
Channels 2&3	Channel 3	Lock 2	OUT	Exit Authorised
Channels 1&4	Channel 4	Lock 1	OUT	Exit Authorised

This feature operates slightly differently on a PAC 2222. As the PAC 2222 is a 2-door controller, only one door pair is available, doors 1 and 2.

When sharing is set for:

	Reader Channel	Operates	Direction	Transaction
Channels 1&2	Channel 1	Lock 1	IN	Entry Authorised
Channels 1&2	Channel 2	Lock 1	OUT	Exit Authorised

Example

Two readers are fitted on each side of a door, one controlling entry, the other controlling exit.

The entry reader should be connected to channel 1 of the door controller, the exit reader to channel 4. Alternatively, use channel 2 (entry) and channel 3 (exit).

Using the **DC** command, set `RDR-LK D/C 1` to `1-` (`-2` if using 2 and 3, or `12` for both pairs).

From now on a valid key presented to reader 4 (exit) or reader 1 (entry) will operate lock 1. These actions will generate `Exit Authorised` and `Entry Authorised` transactions respectively.

2.5.5 Using the DC Command

Present an editor key to the front panel reader.

If required. type the password and press **ENT**.

The `CMD` prompt is displayed.

```
CMD DC_
```

Type `DC` and press **ENT**.

Use the up and down arrow keys to select the door controller. `D/C 1` is the master door controller, `D/C 2`, `3` and `4` are slave door controllers.

Setting Anti-Passback

This is an option field. To change a setting press the number corresponding to the option you want to change. In this case 1, 2 or 3. If an option is set, its number will be displayed, if not set, a - (dash) will be displayed.

```
PBC D/C 1     ---
```

PAC 2244

Option 1 Sets anti-passback with door 1 as entry and door 4 as exit.

Option 2 Sets anti-passback with door 2 as entry and door 3 as exit.

Option 3 Sets anti-passback on exit.

PAC 2222

Option 1 Sets anti-passback with door 1 as entry and door 2 as exit.

Option 2 Not applicable.

Option 3 Sets anti-passback on exit.

```
PB-TIM D/C 1  0
```

Anti-Passback Time

Type the time, in minutes between 10 and 30, after which a key may be used again after entry (or exit).
Set a time of 0 for no time-out - entry will only be allowed when a key has left the area.

Press **ENT** and **+**.

```
RDR-LK D/C 1  --
```

Lock Sharing

This is an option field. To change a setting press the number corresponding to the option you want to change. In this case, 1 or 2. If an option is set, its number will be displayed, if not set, a - (dash) will be displayed.

PAC 2244

Option 1 Channels 1 and 4 operate lock output 1.

Option 2 Channels 2 and 3 operate lock output 2.

PAC 2222

Option 1 Channels 1 and 2 operate lock output 1.

Option 2 Not applicable.

Press **ESC** to return to CMD prompt.

2.6 Door Options - D Command

This command sets lock release time, door open time, time profile for automatic opening and lock mode options such as fail-safe/fail-secure, etc.

The **D** command allows the setting of several features on each door or reader. Each of these features is described in detail below, followed by a description of the **D** command itself.

The features are described in the order in which they appear and the heading for each command also includes the prompt displayed when using the **D** command.

When a door controller is first installed, if the **SYSTEM START** command is used (see *17263 PAC 2200 Series Controllers Installation Guide*), some values will already be set. These will be indicated in the descriptions below.

2.6.1 Lock Release Time

Prompt: `LRT`
Range: 0-255 seconds
Default: 5

The amount of time, in seconds, that a lock will operate when a valid key is presented or a **Request to Exit** button is pressed. After the **SYSTEM START** command has been used, the lock release time for all doors is set to 5 seconds.

When setting this value, consideration should be given to the way in which the door operates, its location and the people who will be using it. For instance, elderly or disabled people may require a longer time to open the door after presenting their keys.

Note

If door monitoring is enabled, the lock release time will be cancelled when the door controller detects the door has closed.

2.6.2 Door Open Time

Prompt: `DOT`
Range: 0-255 seconds
Default: 0

The value entered here performs two functions, enabling door monitoring and the length of time a door can be left open before a warning.

2.6.3 Door Monitoring

The fitting of a door contact switch is described in *17263 PAC 2200 Series Controllers Installation Guide.*

- If the LRT value (see Section 2.6.8) is non-zero (i.e. between 1 and 255), door monitoring is enabled. This means that the door controller expects a switch to open when the door is opened and to close when the door is closed.
- If no door contact switch is fitted, this value should be set to `0`.
- If a door contact switch is fitted and this value is set to `0` and the switch will be ignored.
- If no door contact is fitted but you wish to monitor the reader and its cable for tamper events, a non-zero value should be entered here. The DC/DR1 terminal of the reader channel must also be connected to ground at the reader.

Once door monitoring is enabled, the door controller will respond to alarm events and warnings. These are:

- **Unauthorised Access,** the door has opened without a valid key being presented or a **Request to Exit** switch being pressed. This event must be accepted by an editor key.
- **Door Left Open,** a warning event generated when a door is left open for a period longer than the door open time.

2.6.4 Time Profile

Prompt: `TP`
Range: 0-128
Default: 0

See Section 2.3.2 for details on creating time profiles.

A time profile can be used to automatically lock and unlock a door at set times of the day and days of the week. A typical example would be a public access door that is unlocked during office hours to allow non-keyholders to enter but requires a key at all other times. In this case, the door would unlock between say, 8:30am and 5:30pm, Monday to Friday. The time profile could also prevent unlocking on public holidays, such as Christmas, etc.

If you have no intention of automatically unlocking a door, set the value to `0`.

The value entered is the number of the time profile that will control automatic locking and unlocking. It is recommended that time profiles used for controlling doors are not used for any other purpose. This allows changes to be made to door control, without inadvertently disturbing other time controlled functions, such as access codes, alarm zones, etc.

`Automatic Lock` and `Automatic Unlock` transactions are generated on each occasion.

- If a value of `0` is used, a key will be required at all times.
- If a time profile is disabled, the door will lock (if it is already unlocked) and a key will be required at all times until the time profile is enabled again.

2.6.5 Lock Mode Options

2.6.5.1 Mode 1

Prompt: `M`
Option Field 8 options
Default: Option 1 (lock type) set, all other options unset

This option field controls 8 different settings controlling the operation of the reader and lock. They are:

1 Lock Type

Unset Power to unlock, fail-secure
Set Power to lock, fail-safe

If using a power to lock (or fail-safe) locking device, this option should be set. In this case, power will be provided continuously and removed to release the lock. If unset, power will be provided to operate the lock.

2 Emergency Override/Free Exit

Unset Normal Operation
Set Emergency Override/Free Exit

The operation of this option is described in detail in the *17263 PAC 2200 Series Controllers Installation Guide*.

When **unset**, the DC/DR1 and RTE/DR2 inputs operate normally:

DC/DR1, the door contact switch, if fitted, monitors the door position

RTE/DR2, the **Request to Exit** switch.

When this option is **set**, the operation of the DC/DR1 and RTE/DR2 inputs are altered:

DC/DR1, the door contact switch, produces a `Free Exit` transaction. Use Option 8 if it is required to power the lock when the door contact switch opens. Option 2 does not operate the lock when the door contacts are opened, only the RTE/DR2 input can achieve this.

Option 2 should be used in preference to Option 8 where possible. This is because insertion of a non-ferrous metal object between the door contacts could adversely

affect security if Option 8 is used.

RTE/DR2, when opened produces an `Emergency Override On` transaction, when closed produces an `Emergency Override Off` transaction. This allows the monitoring of an emergency switch such as a break-glass.

3 Request for Entry

Unset Normal Operation
Set Request for Entry

When set, a **Request to Exit** switch will produce a `Request for Entry` transaction. This is a useful feature, for instance, when the switch is operated from inside an area to unlock a door once a person outside has been recognised. This may be the case when using audio or video entry systems.

4 PAC AVR

Unset No AVR fitted
Set Automatic Vehicle Recognition

Only set this option when an AVR reader module is attached to the reader channel.

5 PAC Alarm Module/PAC Alarm Event Manager

Unset No PAC Alarm Module/PAC Alarm Event Manager fitted
Set PAC Alarm Module/PAC Alarm Event Manager

Only set this option when an alarm module is fitted to the reader channel. If this option is set when an alarm module is not fitted, the reader LED will flicker. Option 7 (PIN reader with time profiles) and a alarm module cannot be set on the same channel.

6 Exit Out of Hours

Unset Normal Operation
Set Exit Out Of Hours

When set, this option allows people to use a door when their time profile has expired. This would normally be the case for an exit door, where people would be locked in if they failed to leave before their time profile expired. An `Exit out of Hours` report is generated when set.

7 PIN Reader with Time Profiles

Unset No PIN reader with time profiles fitted
Set PIN reader with time profiles fitted.

Only use this option if a PIN reader with time profiles is fitted to the reader channel. Do not set this option if any other type of PIN reader is fitted. Option 5 (alarm module) and a PIN reader with time profiles cannot be set on the same channel.

8 Powered Free Exit

Unset Normal Operation
Set PIN reader with time profiles fitted.

Opening the door contacts results in the lock being powered and a `Free Exit` event being reported. For this feature to work, a door open time must have been assigned.

Shorting the RTE/DR2 input to ground results in an `Emergency Override On` event being reported and the door lock operating.

2.6.5.2 Mode 2

Prompt: M2
Option Field 8 options
Default: All unset

This option field controls an additional 8 settings of which only three are currently used, controlling the operation of the reader and lock. They are:

1 Request to Exit Without Lock Activation

Unset RTE with Lock Output (normal operation)
Set RTE with no Lock Output

This option is designed for use on the secure side of a door where exit is via a handle, etc. Pressing the **Request to Exit** switch simply informs the system that someone has left the area and prevents the system logging an alarm when the door is opened. Such site installations typically have a PIR connected to the RTE/DR2 input of the door controller that is activated when a person approaches the door.

2 Lock as Soon as Possible

Unset Lock release time operates normally
Set Lock de-activated a maximum of 2 seconds after the door is opened.

This option is typically required where a pneumatic door closer is fitted to ensure the door is closed as soon as possible.

3 Log on Door Entry Only

Unset All events are logged
Set Events only logged if the door is opened

When set, if a key is presented to a door but the door is **not** opened, the event will not be logged.

Options 4 - 8 Not currently used.

2.6.6 Door Name

Prompt: ID
Default: DOOR *n*, where n is 1-16.

Use this field to give the door a useful name. This name, which may contain up to 12 letters (**A**-**Z**), numbers (**0**-**9)** and spaces (**SPC**), will appear on all printed reports.

2.6.7 PIN Reader Time Profile

Prompt: PINTP
Range: 0-128
Default: 0

A PIN reader with time profiles provides two levels of security. When the time profile is active, a valid key alone will allow access, when the time profile is inactive, a valid key **plus** the correct PIN is required. If a time profile of 0 is used, a valid key plus PIN will always be required.

An example may be a door that only requires a key during normal office hours but requires a key plus PIN at any other time.

2.6.8 Using the D Command

Each of the settings in the **D** command is fully described above.

Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD D_
```

Type D and press **ENT**.

Use the up and down arrow keys to select the door.

Lock Release Time

```
DR 1    LRT  5
```

Type a value, in seconds, between 0 and 255 for the amount of time the lock will operate.

Press **ENT** and **+**.

Door Open Time

```
DR 1    DOT  0
```

Type a non-zero value to enable door monitoring.
The value itself is the time, in seconds, after which a door left open warning will be generated.

Press **ENT** and **+**.

Time Profile

```
DR 1    TP   0
```

Type a time profile that will control the automatic locking and unlocking of the door. If a time profile of 0 is entered, a key will always be required.

Press **ENT** and **+**.

Lock Mode Options

```
DR 1 M1 --------
```

This is an option field. To change a setting, press the number corresponding to the option to change. In this case 1 to 8. If an option is set, its number will be displayed, if not set, a -(dash) will be displayed.

Option 1	**Unset**: Fail-secure lock **Set**: Fail-safe lock
Option 2	**Unset**: Normal RTE, door contact **Set**: Emergency override, free exit
Option 3	**Unset**: Normal RTE report **Set**: Request for entry report
Option 4	**Unset**: No AVR module **Set**: AVR module fitted
Option 5	**Unset**: Noalarm module **Set**: Alarm module fitted
Option 6	**Unset**: Normal operation **Set**: Exit out of hours allowed
Option 7	**Unset**: No PIN reader with time profiles **Set**: PIN reader with time profiles fitted
Option 8	**Unset**: Normal operation **Set**: Powered free-exit

Press **ENT** when all required options are set.

Press **+**.

```
DR 1  M2--------
```

Door 1, Lock Mode 2 (Options).

This display consists of a further 8 settings represented either by a number or a - (dash). Each setting is changed by pressing the number. When set, the number will appear: when not set, a - (dash) will replace the number. At startup, all settings will be off.

1 **Set:** RTE with no lock output. This is designed to be used on the secure side of a door where exit is via a handle, etc. Pressing the **Request to Exit** switch informs the system that someone has left the area.
Unset: RTE with lock output. This is the default setting. When the **Request to Exit** switch is pressed, the lock is de-activated and the door can be opened.

2 **Set:** Early lock release time. When set, the lock is de-activated a maximum of two seconds after the door is opened.
Unset: lock release time operates normally.
Lock is de-activated when the lock release time expires or the door closes.

3 **Set**: Log authorised event only when door opened. When set, any authorised event is only reported if the door is opened.
Unset: All events are logged whether or not the door is opened.

4 **Elevator Control.** This option is **not** user configurable and is set via a PC.

5-8 These settings are not currently used.

Press **ENT** then **+**.

Door Name

```
DR 1  DOOR   1
```

Enter a name for the door. Use up to 12 letters (A-Z), numbers (0-9) and spaces (**SPC**).

Press **ENT** and **+**.

PIN Reader Time Profile

```
DR 1   PINTP  0
```

Only used when a PIN reader with time profiles is fitted. When the time profile is active, only a valid key is required; when inactive, a valid key **plus** PIN is required for access. A time profile of 0 requires a valid key **plus** PIN at all times.

Press **ENT** then **ESC**.

2.7 Reader Tamper - RD Command

Reader tamper is disabled by default and should only be enabled on readers that require it. Most of the **RD** commands should not be altered as they are set using the administration software.

To use the RD command:

Enter **Editor** mode by pressing the **Reset** button twice.

`CMD _`	If necessary, set the system type to 0 using the **INST** command and press **ESC**.
`CMD _`	Type `RD` and press **ENT**.
`RDR1 --------`	Type Y to enable reader tamper on in and out readers on door 1. Press **+**.
`RDRn --------`	Repeat for readers on each door. Press **ESC.**
`RDR1 TYPE`	Do not alter this setting. Press **+**.
`RDR1 STRT`	Do not alter this setting. Press **+**.
`RDR1 LEN`	Do not alter this setting. Press **+**.
`RDR1 DIR1`	Do not alter this setting. Press **+**.
`RDR1 DIR2`	Do not alter this setting. Press **+**.
`RDR1 ENTRY`	Do not alter this setting. Press **+**.
`RDR1 EXIT`	Do not alter this setting. Press **+**.
`CMD _`	If necessary, set the system type to original setting using the **INST** command and press **ESC**.

Notes

1. This is required on each controller that requires reader tamper enabling.
2. The reader tamper settings on slaves are not altered by a download or initialisation from the master.

2.8 Alarm Modules - MR, MS and RE Commands

These commands specify alarm inputs and relay outputs.

2.8.1 MR Command - Alarm Module Responses

There are 255 possible alarm module responses, each consisting of two items, a manual switch and a time profile. By assigning one response to several alarm inputs, several inputs can be enabled and disabled at once. For instance, if you had 10 fire doors all monitored by alarm module inputs, by assigning the same response they can all be enabled/disabled together. Alternatively if you need to control inputs individually, define responses for each input.

2.8.1.1 Manual Switch

The manual switch allows an operator to manually enable/disable all inputs that are assigned the response.

2.8.1.2 Transactions

Inputs that are enabled manually will produce a `Manual Engage` transaction. Inputs that are disabled manually will produce a `Manual Isolate` transaction.

2.8.1.3 Time Profile

If a time profile is part or a response, any alarm inputs that are assigned that response will be **disabled** while the time profile is active. For instance, a time profile set to 9:00am to 5:00pm, Monday to Friday, assigned to a response, will disable all inputs with that response between those hours.

For an alarm input to automatically enable/disable with a time profile, it must be manually enabled first.

2.8.1.4 Transactions

Inputs that are enabled automatically will produce an `Auto Zone Enable` transaction. Inputs that are disabled automatically will produce an `Auto Zone Disable` transaction.

2.8.1.5 Using the MR Command

Use the **MR** command to define alarm module responses. These responses can then be assigned to individual inputs using the **MS** command (see Section 2.8.2).

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The `CMD` prompt is displayed.

```
CMD MR_
```

Type `MR` and press **ENT**.

Use the up and down arrow keys to select a response. There are a maximum of 255 responses.

```
REC 1    ON     N
```

Manual Switch

Type `Y` to switch on the response.

Type `N` to switch off the response.

Note

Any points that have been assigned this response will be disabled if you select `N`, or enabled if you select `Y`.

Press **ENT** and **+**.

```
REC 1    TP     0
```

Time Profile

Enter the time profile number used to control the response. When the time profile is active, any points assigned this response will be disabled. A time profile of 0 means any points assigned this response will be controlled only by the manual switch.

Press **ENT** and **+**.

2.8.2 MS Command - Alarm Module Sensors

Each alarm module input is enabled by giving it a response number using the **MR** command (see Section 2.8.1). In addition, each input can be programmed to operate a relay on any alarm module on the same door controller.

2.8.2.1 Response Number

By giving one or more inputs the same response number, several points can be controlled together. The number you enter is the record number of the response created using the MR command.

2.8.2.2 Alarm Module Relay

Any alarm module relay on the same door controller can be set when a point is activated. The number to enter is the number of the relay according to the table below:

Module Location	Relays			
Channel 1	1	2	3	4
Channel 2	5	6	7	8
Channel 3 *	9	10	11	12
Channel 4 *	13	14	15	n/a

* **Not available on PAC 2222 door controllers.**

Note

The fourth relay on alarm module 4 is not available for alarm input activation.

There are three stages to programming an alarm module.

1. Indicate the presence of the alarm module on a reader channel by setting option 5 of the lock mode using the **D** command (see Section 2.6.8).
2. Define one or more input responses using the **MR** command (see Section 2.8.1). A response consists of two items, a manual switch and a time profile.
3. Assign a response and/or a relay activation to one or more of the alarm module inputs using the **MS** command (see Section 2.8.2.3).

2.8.2.3 Using the MS Command

Use the **MS** command to assign responses to alarm module inputs. Each record contains responses for all 8 inputs on each alarm module.

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD MS_
```

Type MS and press **ENT**.

Use the up and down arrow keys to select an alarm module. There are a maximum of 16 alarm modules.

```
DR 1  IP 1 R 0
```

Input 1 Response Number

Enter the response number for this input. If you enter `0`, the input will not be monitored at all.

Press **ENT** and **+**.

```
MODULE RELAY  0
```

Input 1 Module Relay

Enter a relay number, see the table above, that will be set if the input is activated. Enter `0` for no relay activation.

Press **ENT** and **+**.

```
DR 1  IP 2 R 0
```

Input 2 Response Number

```
MODULE RELAY  0
```

Input 2 Module Relay

Repeat the above for the inputs you are using.

Press **+** to go to the next field.

Press **ESC** when you have finished.

2.8.3 RE Command - Relays

There are two types of relay that can be activated. They are:

- The 4 relays located on each door controller.
- The 4 or 8 relays located on each alarm module.

Note

The default behaviour of the door controller relays on a PAC 2244 can only be changed if no alarm module is assigned to reader channel 4.This does not apply to the PAC 2222 which lacks reader channel 4.

The relays on the alarm modules can be activated by alarm module inputs as described above, in the **MS** command. This section describes how to use these relays to respond to other events.

There are two types of event to which these relays can respond; system events and time profiles. Although possible, it is unlikely that you will activate a relay on both a system event and time profile. If you do, the relay will stay set until all conditions are clear.

2.8.3.1 System Events

The following table shows the types of event and their code number that can be assigned to a relay.

System Event	Relay Code	Notes
No Response	0	
Door Alarm on any door	1	Note 1
Door Left Open on any door	2	Note 2
Case Tamper	3	
Door 1 Open	4	Note 3
Door 2 Open	5	"
Door 3 Open	6	"
Door 4 Open	7	"
Door 1 Left Open	8	Note 4
Door 2 Left Open	9	"
Door 3 Left Open	10	"
Door 4 Left open	11	"
Door 1 Alarm	12	Note 5
Door 2 Alarm	13	"
Door 3 Alarm	14	"
Door 4 Alarm	15	"

Notes

1. An alarm event (i.e. unauthorised access, cable tamper, etc.) at **any** of the four doors on the door controller will activate a relay given this code. The relay will not be deactivated until **all** such alarms are cleared. This is the same as the default action given to relay 1 if not programmed otherwise.
2. This code will activate a relay if **any** of the four doors on the door controller are left open and it will be deactivated when all the doors are closed. This is the same as the default action given to relay 3 if not programmed otherwise.
3. These codes will activate a relay if a specified door is opened, for whatever reason, and it will deactivate when the door is closed.
4. These codes will activate a relay if a specified door is left open and it will deactivate when the door is closed.
5. These codes will activate a relay if a specified door has an alarm event, i.e. unauthorised access or cable tamper, it will deactivate when the alarm is cleared.

2.8.3.2 Time Profiles

A relay can be made to operate with a time profile. When the time profile is active, the relay will be set. Examples are the use of external lighting, switching heating or ventilation systems, etc.

2.8.3.3 Using the RE Command

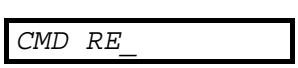
There are 16 relay records, one for each alarm module.

To program the door controller relays, select `DR 4`, `DR 8`, `DR 12`, `DR 16` for door controllers 1, 2, 3 and 4 respectively, provided no alarm modules are installed on these channels.

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The `CMD` prompt is displayed.



Type RE and press **ENT**.

`DR 1 RLY1 TP 0`

Door 1, Relay 1 Time Profile Number.

Type a time profile number (*1-128*). When the time profile is activated, the relay will activate; when the time profile finishes, the relay will deactivate. A time profile of `0` will remove any timed activation.

Press **ENT** and **+**.

`DR 1 RLY1 SYS 0`

Door 1, Relay 1 System Event

Type a system event (0-15) as shown in the table above.

Press **+** to go to the next relay.

There are a total of 4 relays, each with a time profile and system event value.

Press **ESC** to return to the `CMD` prompt.

Examples

To have each door controller use its four on-board relays to indicate `Door Left Open` for its own individual doors:

1. Use the **RE** command and select the `DR 4` record for door controller 1.
2. For `RLY1 SYS` enter a value of `4` and press **ENT**.
3. For `RLY2 SYS` enter a value of `5` and press **ENT**.
4. For `RLY3 SYS` enter a value of `6` and press **ENT**.
5. For `RLY4 SYS` enter a value of `7` and press **ENT**.

If door 2 is left open relay 2 will activate and stay activated until the door is closed.

2.9 Editor Keys - I Command

This command is used to assign editor keys. Before adding a key, first determine the editor level that the key will be assigned, see Section 2.9.1.2. Up to 32 editor keys can be assigned, each one with its own individual password and editor level. **Only the master key can add, delete and modify the use of the editor keys**.

2.9.1.1 Passwords

Both the master key and the editor keys can have a password assigned. This prevents anyone with an editor key gaining access unless they also know its password. Passwords can only be issued to editor keys, or altered, by the holder of the master key using the **I** command.

2.9.1.2 Editor Levels

The ability of any editor key to issue commands is determined by the editor level it is assigned. The editor level is a numeric value, between 0 and 2047, calculated from the following table. Each action is given a value, by adding the values for each action to be assigned an editor level is obtained. Some typical examples are given.

Value	Commands	Actions
0	none	Accept alarms only
1	**P1-P9**(exc **P6**) **HE, K**	Printer functions
2	**L**	Manual lock and unlock
4	**AC, AL, E**	Access codes and access levels; edit personnel
8	**D, RD**	Set door data; reader set-up
16	**T, PR**	Time profile functions
32	**C**	Change date and time
64	**V**	Void (delete) a personnel key
128	**A, N**	Add a personnel key; view a PIN
256	**MR, MS, RE**	Alarm module programming
512	**DC, M, F**	Passback and door interlock; modem options; event filters
1024	**HR, HP**	Holiday functions

2.9.1.3 Editor Level Examples

This table gives some examples of how to calculate editor levels. The names used refer to typical types of operator or user. Note, for instance, that the Installer cannot add or delete personnel, or the Administrator modify door programming.

Value	Commands	Supervisor	Administrator	Installer
0	none	Yes	Yes	Yes
1	**P1-P9,HE, K**	Yes	Yes	
2	**L**	Yes	Yes	Yes
4	**AC, AL, E**	Yes	Yes	
8	**D, RD**	Yes		Yes
16	**T, PR**	Yes	Yes	Yes
32	**C**	Yes	Yes	Yes
64	**V**	Yes	Yes	
128	**A,N**	Yes	Yes	
256	**MR, MS, RE**	Yes		Yes
512	**DC, M, F**	Yes		Yes
1024	**HR, HP**	Yes	Yes	Yes
	Total	**2047**	**1271**	**1850**

2.9.1.4 Using the I Command

Present the master key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD I_
```

Type **I** and press **ENT**.

```
E3 KEY 00000000
```

The display will now show the first unassigned editor. An unassigned editor key is one with a key code of 00000000.

To add a new editor key:

Present a key to the front panel reader.

If the key is already assigned, a REPEATED KEY message is displayed for about 2 seconds.

```
REPEATED KEY
```

If the key is valid, its 8-character code will appear.

```
E3 KEY 8824A474
```

Press **+**.

To modify an existing editor key:

```
E3 KEY 00000000
```

At the KEY prompt, you can either use the up and down arrow keys to select a key, or press the **FastFind** button (•).
Using **FastFind** you can find a key in two ways:

Using **FastFind** you can find a key in three ways:

1. Present the key to the front panel reader.
   If the key is not in the database, a *NOT IN DATABASE* error message is displayed for about 2 seconds before returning to the ID prompt.
2. Type the editor key number (1-32) and press **ENT**.

Change the key, if required, by presenting a new key to the front panel reader.

Press **+**.

To delete an editor key:

```
E9 KEY 28851408
```

Select the key to delete as described above.

When the key code is displayed, press **CLR** - the key code will be replaced with zeroes.

```
E9 KEY 00000000
```

Press **ENT** and **+**.

To specify editor level:

```
E3    LEVEL 0
```

Enter the editor level to be assigned to the key (see Section 2.9.1.2 for editor level values). The value must be between 0 and 4095. 0 means the key can only accept alarms, 4095 gives access to all but the master key only commands.

Press **ENT** and **+**.

To specify editor ID:

```
ID
```

The name entered here will appear on printed reports of editor use and alarm acceptance when this editor key is used. Type a name of up to 12 characters (A-Z, 0-9 and SPC).

Press **ENT** and **+**.

To specify a password:

```
PASSWD
```

Enter an 8-character password (A-Z, 0-9 and **SPC**). The password will be required each time the key is used to enter **Editor** mode. If no password is entered, no password will be asked for.

Press **ENT** and **+**.

```
ID 27    AC 0
```

Whatever method you use to find a key you will be presented with the ID number and access code.

```
WHO SMITH AB
```

Note

If you use 12-character IDs, press **+** to view the name assigned to the key (left).

At this point you can use the up and down arrow keys to move through the database to find the key you want to edit. You can also press the **FastFind** button (•) to return to the `ID` prompt.

2.10 Normal Keys - A, E and V Commands

2.10.1 A Command - Add a Key

This command is used to add keys to the system and to assign access codes and identities to keys.

The following should be available before starting:

- A master key or an editor key with an editor level that allows adding of keys.
- One or more keys to add.
- The names of each keyholder (not required if using 4-digit identification).
- The access code to be assigned to each keyholder.

To add a key:

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD A_
```

Type A and press **ENT**.

```
ID 27    AC 0_
```

The next available unused ID number will now appear along with a prompt to enter the access code.

Type the access code (0 to 128).

Press **ENT** and **+**.

```
WHO _
```

Note

This prompt will only appear when you are using 12-character IDs.

Type an identification for this key, e.g. it may be a name, a payroll number or a flat/residence name.

Use any of the characters on the keyboard (A-Z, 0-9, **SPC**). Do not start a name with a **SPC** or a number.

If the ID that is already being used, a *DUPLICATE NAME* error message will appear for about 2 seconds before returning to the WHO prompt.

Press **ENT** and **+**.

```
KEY    00000000
```

Either:

- Present the key to be added to the front panel reader. If the key is valid, the addition of this key is complete and you will move directly to a prompt for the next key. **There is no need to press the ENT or +**.
- Type the 8-character key code.
  If for some reason you are not in possession of the key or you are entering AVR codes, provided you know its 8-character code, you can enter it here. Use only the characters A-F and 0-9.

Press **ENT** when complete.
If the key is valid, the addition of this key is complete a prompt for the next key is displayed. **There is no need to press the + key**.

If, using either of these two methods, enter a key that is already stored the *REPEATED KEY* error message is displayed for about 2 seconds before returning to the KEY prompt.

```
ID 28    AC 0
```

Continue adding keys.

When there are no more keys to add, press **ESC** to return to the CMD prompt.

Note

The access code remains the same as the previous key you entered. If adding a large number of keys, by grouping them by access code you will speed up entry as well as reducing the risk of error.

Once a key has been added, it will be recognised by all the readers in the system. However, this will not be the case if:

- Slave door controllers are disconnected or not communicating with the master.
- A download is in progress to a slave door controller, in which case the new information will not reach the slave until completion of the download.

2.10.2 E Command - Edit a Key

Change the access code of a key as well as the 12-character name (if used) at any time. You can also assign a holiday profile to a keyholder. The access code and holiday profile must already be defined (see Sections 2.2.1 and 2.2.2).

To edit a key:

Present an editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD E_
```

Type E and press **ENT**.

```
ID 1     AC 1_
```

Use the up and down arrow keys to select a key, or press the **FastFind** (•) button .
Using **FastFind** you can find a key in three ways:

1. Present the key to the front panel reader.
   If the key is not in the database, a *NOT IN DATABASE* error message is displayed for about 2 seconds before returning to the ID prompt.
2. Type the 4-digit ID of the key and press **ENT**. Any number between 1 and 4000 will be accepted.
3. Type the 12-character ID and press **ENT**. If no match is found, the *UNKNOWN NAME* error message is displayed for about 2 seconds before returning to the ID prompt.

```
ID 27    AC 0
```

Whatever method you use to find a key, the ID number and access code is displayed.

Note

```
WHO SMITH AB
```

If 12-character IDs, are used, press **+** to view the name assigned to the key (left).

Use the up and down arrow keys to move through the database to find the key to edit. Press the **FastFind** (•) button (•) to return to the ID prompt.

```
ID 27    AC 7
```

Once you have found the key to edit, change the access code by typing the new value.

Press **ENT** and **+**.

```
WHO SMITH AB
```

(12-character ID only)
Enter a new name. Either type over the existing name or press **CLR** to clear the field before typing a new name.

Press **ENT** and **+**.

```
ID 27  HOLS  0
```

Type a holiday profile (a value between 0 and 24).

Press **ENT**.

Either press **ESC** to return to the CMD prompt, or use the up and down arrow keys, or **FastFind** (•) button to search for another key to edit.

When a key has been edited, the changes to access code and/or holiday profiles will be observed by all the readers in the system. This will not be the case if:

- Slave door controllers are disconnected or not communicating with the master.
- A download is in progress to a slave door controller, in which case the new information will not reach the slave until completion of the download.

2.10.3 V Command - Void a Key

Removing keys from the system is a very simple process. Several options are available for selecting the key to be removed. They are:

- When prompted, present the key to the front panel reader.
- Enter the 4-digit ID number.
- Enter the 12-character ID, if used.
- Use the up and down arrow keys to search for the key in the database.

Tip

Instead of voiding a key from the system, consider changing its access code to 0 (zero). By doing this you will prevent use of the key (any attempt will result in a `No Access: Locked Out` transaction being generated) but you will also have a record of a 'lost' key being used unsuccessfully.

To void a key:

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

```
CMD V_
```

Type `V` and press **ENT**.

```
ID _
```

At the ID prompt you can select the key to be deleted using one of these methods:

1. Present the key to the front panel reader.
   If the key is not in the database, the *NOT IN DATABASE* error message is displayed for about 2 seconds before returning to the ID prompt.
2. Type the 4-digit ID of the key and press **ENT**. Any number between 1 and 4000 will be accepted.
3. Enter the 12-character IDs and press **ENT**. If no match is found, the *UNKNOWN NAME* error message is displayed for about 2 seconds before returning to the ID prompt.

```
ID 27    AC 7
```

Whatever method you use to find a key, you will be presented with the ID number and access code.

Note

```
WHO SMITH AB
```

If you use 12-character IDs, press **+** to view the name assigned to the key (left).

At this point, you can use the up and down arrow keys to move through the database to find the key you want to delete. You can also press the **FastFind** (•) button to return to the `ID` prompt.

Once you have selected the key you want to delete, press **ENT**. At the `CONFIRM VOID` prompt, press `Y` to confirm and you will be returned to the `CMD` prompt. Any other key will return you to the `CMD` prompt without voiding the key.

```
CONFIRM VOID
```

When a key has been voided, it will be rejected by all the readers on the system and a `No Access: Unknown ID` transaction will be produced. This will not be the case if:

- Slave door controllers are disconnected or not communicating with the master.
- A download is in progress to a slave door controller, in which case the new information will not reach the slave until completion of the download.

2.10.4 Check Key Access

Confirm that keys work correctly, test at least one example of each access code at all readers. Ensure that keys are allowed or denied access at each reader according to their access code.

2.11 PIN Codes - N Command

You may have a special type of reader on your system that requires a Personal Identification Number (PIN) to be entered in addition to a key being presented. PIN readers work by calculating a 4-digit (0001 to 9999) number from the unique token code embedded in the key. The keyholder must then enter this PIN number correctly before the key will be allowed access by the door controller.

An additional feature of the door controllers is that they allow a time profile (see Section 1.3.3) to control when a reader requires a PIN with the key or just the key:

- When the time profile is active, the PIN reader operates like a conventional key reader, requiring no PIN.
- When the time profile is inactive, a key plus the PIN is required to gain access.

This feature must be set using the **Doors** (**D**) command, although the time profile is set using the **Time Profile** (**T**) and **Time Periods** (**PR**) commands.

PIN Reader Duress

Another feature of the PIN reader is the ability to generate a duress alarm. If a keyholder is being forced to open a door, by adding one to their PIN, the door will open as normal. However, a duress alarm will be reported at the master controller.

Example

If a keyholder has a PIN of 1234 and they enter 1235 (PIN plus 1), the door will open as normal but a duress alarm will be generated.

Note

Adding 1 to a PIN to form the duress code affects the last digit only - i.e. if the PIN number is 6789, the duress will be 6780, **not 6790.**

To find out the PIN of a PAC key (it does not have to be in the database):

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

Note

The editor key must have an editor level that allows the viewing of PIN codes.

```
CMD N_
```

Type N and press **ENT**.

```
* PRESENT KEY *
```

Present a key to the front panel reader.

```
PIN NO IS  1234
```

The 4-digit PIN will be displayed for about 2 seconds.

Either present other keys to determine their PIN codes or press **ESC** to return to the CMD prompt.

2.12 Manual Lock/Unlock a Door - L Command

It is possible to manually lock and unlock a door from the master controller. It may be necessary to do this, for instance when a door needs to be kept open while contractors are working in an area or equipment is being moved around. Also, a door normally open on a time profile may need to be locked while a receptionist or guard is not available.

2.12.1 Doors Controlled by a Time Profile

Manual lock will lock the door, keys will then be required to gain access. If no further action is taken, the door will still unlock at its next automatic opening time.

If the door is manually unlocked, it will lock again, if no further action is taken, at its next automatic closing time.

2.12.2 Doors not Controlled by a Time Profile

Manual unlock will unlock the door, it will stay unlocked until manually locked again.

2.12.3 Using the L Command

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

Type L and press **ENT**.

The state of door 1 is displayed. N (Normal) means that no manual override is in operation - the door may be locked or open on a time profile.

To select the door to lock or unlock, either use the up and down arrow keys to select an access level, or press the **FastFind** (•).
If you use **FastFind**, type the door number you require and press **ENT**.

Type L and press **ENT** to lock the door.

Type U and press **ENT** to unlock the door.

Press **ESC** to return to the CMD prompt.

3. Printing

3.1 Using the Printer

Far more information about the system can be obtained if you have a printer attached to your master door controller. Full details for connecting a printer are included in *17263 PAC 2200 Series Controllers Installation Guide.*

3.1.1 Setting up the Printer

A dot-matrix printer using continuous (fan-fold with sprocket holes) printer paper should be used. Consult the documentation supplied with the printer for full details on its correct operation. If you have problems printing properly, make sure of the following:

- Make sure that the printer is plugged in, switched on and 'on-line'.
- For neatness, make sure the printer's 'top of form' is set. Do this by manually setting the paper so that the next line will print just below the perforation, either press a **Top of Form** button or switch off the printer for 10 seconds.
- Ensure that the paper feeds into and out of the printer with no obstructions. Be particularly careful that power and signal cables do not obstruct the paper.
- Switch off the printer when it is left unattended for a long time, for instance overnight or weekends. All unprinted events will be printed when the printer is switched on again.

3.1.2 On-Line Transaction Printing

If the printer is connected to the master door controller and is powered and 'on-line', each event is printed as it happens. This will result in a permanent record of all events that occur on the system. The master door controller will store about 2500 events in its non-volatile memory. These events can be recalled over a chosen date range using the **P5** command (see Section 3.3.5).

If the printer is not connected or switched off for a period of time, all the unprinted events will be stored. When the printer is connected again, these events will be printed.

No events will be printed while in **Editor** mode. They will all be printed when you leave **Editor** mode but see Section 3.1.3.

3.1.3 High Priority Events

Some events, alarms, alarm acceptance, etc. are considered high priority events by each door controller. These will always be reported before any other, low priority events. This will not be noticed if the printer is permanently connected and reporting events as they happen. If, however, the printer is reconnected after a period of time, **all** the high priority events will be printed first. This will result in the events appearing on the printer, apparently in the wrong order.

This effect will also be observed if any high priority events occur while you are in **Editor** mode.

3.1.4 Printer Reports

There are several reports that can be printed. These include a list of keyholders, most of the data stored in the system, past transactions and system status. These reports are produced by entering one of the printer commands, **P1** to **P9,** see Section 3.3. The **P6** command, which prints installation details, is only available to the holder of the master key.

Two other commands that are associated with printer output are the **HE** and **K** commands, see Sections 3.2 and 3.4.

3.2 Print Header - HE Command

Two features are provided, the header text that appears at the top of each page and whether or not a new page is started and a header printed at the end of each page of on-line transactions.

The text that appears at the top of every report can be changed to reflect the site name or any other suitable text. Up to 30 characters can be entered, which are split into 3 'strings' of 10 characters each.

When on-line transactions are printed, they will normally print continuously without interruption. However, transactions can be set to leave a gap at the end of each page and print the header at the top of the next page.

Present an editor key to the front panel reader.
Enter the password and press **ENT**, if required.

The CMD prompt is displayed.

Type HE and press **ENT**.

Header Text 1

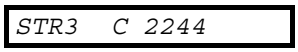
Type the first 10 characters of the header text.

Press **ENT** and **+**.

Header Text 2

Type the second 10 characters of the header text.

Press **ENT** and **+**.



Header Text 3

Type the final 10 characters of the header text.

Press **ENT** and **+**.

Enable Header in On-Line Transactions

Type Y for on-line transactions to start a new page and print the header.

Type N for continuous transaction printing, without break.

Press **ENT** and **ESC**.

3.3 Print Reports - Pn Commands

Most of these reports allow you to select a range to print, such as personnel numbers, date range for transactions, etc. Each report that requires a range prompts for a `From` and `To` value. In all cases, the default values are the top and bottom of the list, e.g. 1 and 4000 for personnel, 1 and 128 for time profiles. Where a range is required, start the printout with the **FastFind** button (•).

Present the editor key (master key for **P6** command) to the front panel reader.

If required, type the password and press **ENT**.

The `CMD` prompt is displayed.

```
CMD P1_
```

Type:

`P1`	Personnel
`P2`	Door Data
`P3`	Access Codes
`P4`	System Status
`P5`	Transactions
`P6`	System Set Up
`P7`	Alarm Data
`P8`	Time Profiles
`P9`	Holiday Profiles

Press **ENT**.

The **P2**, **P4** and **P6** commands will start printing immediately; for other commands, see below.

```
PRINT FROM  1
```

P1, P3, P7, P8, P9

These commands ask for a `FROM` and `TO` parameter.

The default values are `FROM 1`, and `TO` *the highest value* (P1: `4000`, P3:`128`, P7: `128`, P8: `32`, P9: `24`).

Press **ENT** and **+**.

```
PRINT TO    4000
```

(P1 - Personnel)

Press **FastFind** (•) at any point to accept the entered values and start the report.

```
STRT DT 00-00-00
```

P5 - Transactions

This command asks for a start date and time plus an end date and time. The defaults are the earliest possible date and time and the current date and time.

```
STRT TIME  00-00
```

Use **+** to any other date and time as the report range. Press **ENT** after making any changes.

```
END DT  11-11-93
```

Press **FastFind** (•) at any point to accept the entered values and start the report.

```
END TIME   17-13
```

Example

Printing

```
*PRINTING PERSON
```

If the printer is connected, a scrolling display will appear indicating that the report is being printed.

Press **ESC** at any time to abort the printout.

Note

The personnel (**P1**) may appear to spend a long time showing this display but not printing. This is because it examines all 4000 possible keyholders for valid entries, unless the upper limit is reduced.

PRINTER FAULT

Failure to Print

If the printer is not connected or out of paper, you may get this message, plus a short beep.

Reconnect the printer or fill it with paper and try the command again.

3.3.1 P1 - Personnel

This report produces a list of all keyholders in the system. The PIN NO will only be printed if your editor level allows.

```
PAC INTERNATIONAL PAC 2244     PERSONNEL REPORT
   DATE: 11-11-93   TIME: 16:53  REQUESTED BY MASTER KEY       PAGE 1

PERS. ID        NAME           TOKEN CODE   ACCESS CODE   PIN NO
0001         MASTER KEY         D3062425         1          1609
0002         JONES A            8824A474         1          5613
0003         SMITH J            3A33642A         1          3446
0004         BROWN IM           C824B4BC         3          8249
0005         BAXTER OT          5503E480         3          4854
0006         TAYLOR TB          8C25D403         3          1524
0007         ROYLE TS           6903F4F4         3          9099
0008         LEE SA             230314F3         3          9030
0009         LIDDY BP           C824942B         3          2941
0010         BORRELL LA         4E02C491         3          5435
0011         WALKER STM         74665451         3          6736
```

Figure 5 Sample P1 - Personnel Printout

3.3.2 P2 - Door Data

All 16 possible doors are printed.

```
PAC INTERNATIONAL PAC 2244     DOOR DATA REPORT
   DATE: 11-11-93   TIME: 17:32  REQUESTED BY MASTER KEY       PAGE 1

DOOR NO   DOOR NAME   RELEASE TIME  OPEN TIME   TIME PROFILE  LOCK MODE PIN TP

01       FRONT DR IN       7           15           1        1---5---     0

02       ACCOUNTS          5           15           0        1-----7-     1

03       SALES RECEP       5           15           0        1-------     0

04       FRONT DR OUT      0           0            0        --------     0

05       DEVELOPMENT       5           15           0        1-------     0

06       STORES            5           15           0        1-------     0

07       HAZARDS           5           15           0        1-------     0

08       CANTEEN           5           15           0        1-------     0

09       SIDE DR IN        5           15           0        1-------     0

10       SALES MNGR        5           15           0        1-------     0

11       SALES CORR        5           15           0        1-------     0

12       SIDE DR OUT       0           0            0        --------     0

13       DOOR   13         5           0            0        --------     0

14       DOOR   14         5           0            0        --------     0

15       DOOR   15         5           0            0        --------     0

16       DOOR   16         5           0            0        --------     0
```

Figure 6 Sample P2 - Door Data Printout

3.3.3 P3 - Access Data

This report lists all the access codes, broken down into the primary access level and time profile, and secondary access level and time profile.

```
PAC INTERNATIONAL PAC 2244     ACCESS DATA REPORT
   DATE: 11-11-93   TIME: 10:21  REQUESTED BY MASTER KEY       PAGE 1

ACC CODE  DOORS ACCESSED       TIME PROFILE        TIME PERIODS
001       1-12          Primary   :  000    Period - not assigned
                                              Period - not assigned
                                            Period - not assigned
                        Secondary :  000    Period - not assigned
                                            Period - not assigned
                                            Period - not assigned

002       1,4,8,9,12     Primary   :  001    Period 01 08-45 - 17-30 on  MTWTF--H
                                                Period 02 08-45 - 13-00 on  -----SSH
                                                Period - not assigned
                               Secondary :  000    Period - not assigned
                                                Period - not assigned
                                                Period - not assigned

003       1-12                 Primary   :  001    Period 01 08-45 - 17-30 on  MTWTF--H
                                                Period 02 08-45 - 13-00 on  -----SSH
                                                Period - not assigned
          3,11                 Secondary :  001    Period 01 08-45 - 17-30 on  MTWTF--H
                                                Period 02 08-45 - 13-00 on  -----SSH
                                                Period - not assigned
```

Figure 7 Sample P3 - Access Data Printout

3.3.4 P4 - System Status

This report shows the state of doors and alarm zones within the system. The doors and alarm zones are shown for each door controller in turn.

3.3.4.1 Doors

Door States

UNLOCKED	Door is manually or automatically unlocked, see Override
LOCKED	The door requires a valid key
OPEN	The door is physically open

Door Alarm States

NO ALARM	No alarm conditions present
TAMPER/FORCED	A Tamper or Unauthorised Access
LEFT OPEN	Door left open

Emergency Override?

YES	If doors all doors opened,
NO	Normal condition.

Manual Override?

NORMAL	No override active
UNLOCK	Door manually unlocked (L Command)
LOCKED	Door manually locked (L Command)

Timed Override?

YES	Door opened on a time profile
NO	No active time profile

3.3.4.2 Alarm Zone States

Only alarm module Inputs that have been assigned responses are shown.

Isolated?

YES Isolated, either manually or by a time profile

NO Zone is active

State

CLEAR Input is in its normal condition

ALARM Input is in alarm state

```
              PAC INTERNATIONAL PAC 2244     DOOR AND ALARM STATUS REPORT
   DATE: 11-11-93   TIME: 10:24  REQUESTED BY MASTER KEY       PAGE 1


DOOR CONTROLLER : 01

DOOR  DOOR NAME    STATE           ALARM STATE    EMERGENCY    MANUAL       TIMED
                                                  OVERRIDE?    OVERRIDE?    OVERRIDE?

01    FRONT DR IN  UNLOCKED        NO ALARM       NO           NORMAL       YES
02    ACCOUNTS     OPEN            FORCED/TAMPER  NO           NORMAL       NO
03    SALES RECEP  LOCKED          NO ALARM       NO           NORMAL       NO
04    FRONT DR OUT UNLOCKED        NO ALARM       NO           NORMAL       NO

ALARM ZONE STATUS

ZONE NO             ISOLATED?           STATE

1                   YES                 INPUT CLEAR
2                   YES                 INPUT CLEAR
```

Figure 8 Sample P4 - System Status Printout

3.3.5 P5 - Transaction Printout

The **P5** command prompts you for a date and time range.

Note

The printout will give all the high priority transactions that have occurred in the date range first, followed by the rest of the transactions. This may result in a pause between the two parts of the report.

```
          PAC INTERNATIONAL PAC 2244     TRANSACTION REPRINT
DATE: 11-11-93   TIME: 13:09  REQUESTED BY MASTER KEY       PAGE 1

       DATE     TIME     DOOR          USER      TRANSACTION

     11/11/93  09:14  SALES RECEP                Anti-tamper Alarm
     11/11/93  09:14  SALES RECEP  MASTER KEY    Local Alarm Accepted
     11/11/93  09:14  SALES RECEP                Alarm Cleared
     11/11/93  09:15  SALES RECEP                Door Left Open
     11/11/93  09:15  SALES RECEP                Door Closed
     11/11/93  09:15  SALES RECEP  MASTER KEY    Manual Unlock
     11/11/93  09:16  SALES RECEP  MASTER KEY    Manual Lock
     11/11/93  09:27  ZONE   1                   Alarm Zone Active
     11/11/93  09:27  ZONE   1     MASTER KEY    Local Alarm Accepted
     11/11/93  09:28  ZONE   1                   Zone Restored, ReArmed

     11/11/93  09:00  FRONT DR IN                Automatic Unlock
     11/11/93  09:00  ZONE   1                   Auto Zone Disable
     11/11/93  09:00  ZONE   2                   Auto Zone Disable
     11/11/93  09:11               MASTER KEY    Editor On (Panel)
     11/11/93  09:12  SALES RECEP  BAXTER OT     Access Authorised
     11/11/93  09:13  SALES RECEP                Request to Exit
     11/11/93  09:14  SALES RECEP       ????     No Access: Unknown ID
     11/11/93  09:14  FRONT DR IN  BORRELL LA    Access Authorised
     11/11/93  09:15  SALES RECEP  TAYLOR TB     Access Authorised
     11/11/93  09:15  SALES RECEP                Request to Exit
     11/11/93  09:15  ACCOUNTS     TAYLOR TB     Access Authorised
     11/11/93  09:15  SALES RECEP  ROYLE TS      Access Authorised
     11/11/93  09:15  SALES RECEP                Request to Exit
```

Figure 9 Sample P5 - Transaction Printout

3.3.6 P6 - System Set Up

This command is only available to the master key.

This report shows information created by using the **Installation** (**INST**), **Door Controller** (**DC**) and **Editors** (**I**) commands.

CAUTION

This report contains sensitive information, such as passwords, etc. Take care not to leave it in view or where it can found by unauthorised persons.

```
              PAC INTERNATIONAL PAC 2244     SYSTEM SETUP REPORT
   DATE: 11-11-93   TIME: 15:42  REQUESTED BY MASTER KEY       PAGE 1



BAUD RATE    : 4800
HEADER       : PAC INTERNATIONAL PAC 2244     (enabled)
PRINTER TYPE : EPSON compatible
POLL TABLE   : ---
DATE TYPE    : D-M-Y format
ID type      : Alphanumeric
ADDRESS      : 1

DATA PROTECTION SETUP
     TRANS ENABLED    : Y
     POSITIVE ENABLED : Y
     TIME PROFILE     : 0
     EXCLUDED DOORS   :


ADDRESS           TYPE           DOORS       PASSBACK CODE  PASSBACK TIME  READER/LOCK
 MASTER        PAC 2244         01 02 03 04       ---              00            1-
 02            PAC 2000N        05 06 07 08       ---              00            --
 03            PAC 2000N        09 10 11 12       ---              00            --
 04            PAC 2000N        13 14 15 16       ---              00            --

EDITOR NO.     EDITOR NAME    EDITOR LEVEL   TOKEN CODE     EDITOR PASSWORD

MASTER         MASTER KEY                    D3062425
1              JOE SMITH          4095       8824A474       JOES
2              FRED BROWN         1271       3A33642A       FREDDY
```

Figure 10 Sample P6 - System Set Up Printout

3.3.7 P7 - Alarm Data

This report gives details of alarm inputs and responses, as defined by the **MR** and **MS** commands.

```
             PAC INTERNATIONAL PAC 2244     ALARM SETUP REPORT
   DATE: 11-11-93   TIME: 13:44  REQUESTED BY MASTER KEY       PAGE 1

ZONE   RESPONSE    ACTIVE    PROFILE       RELAYS
1         1          YES        0           4
2         1          YES        0           0
```

Figure 11 Sample P7 - Alarm Data Printout

3.3.8 P8 - Time Profiles

Each time profile is printed along with the its status and the time periods assigned.

```
              PAC INTERNATIONAL PAC 2244     TIME PROFILE REPORT
   DATE: 11-11-93   TIME: 16:01  REQUESTED BY MASTER KEY       PAGE 1

PROFILE   ACTIVE    PROFILE DETAILS
1         YES       Period 01   08:45  -  17:30 on  MTWTF--H
                    Period 02   08:45  -  13:00 on  -----SSH
                    Period - not assigned

2         NO        Period 03   18:00  :  23:59 on  MTWTF---
                    Period 04   00:00  -  06:00 on  -TWTFS--
                    Period - not assigned
```

Figure 12 Sample P8 - Time Profile Printout

3.3.9 P9 - Holiday Profiles

Holiday profiles are printed with all the assigned holiday periods. Holiday profile 1 contains the system holidays.

```
             PAC INTERNATIONAL PAC 2244     HOLIDAY REPORT
   DATE: 30-11-93   TIME: 16:05  REQUESTED BY MASTER KEY       PAGE 1

PROFILE   ACTIVE  START   DURATION START   DURATION  START   DURATION  START   DURATION
1         YES     25/12/93    2    01/01/94    1    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
2         NO      00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
                  00/00/00    0    00/00/00    0    00/00/00     0    00/00/00     0
```

Figure 13 Sample P9 - Holiday Profile Printout

3.4 Kill Transactions - K Command

The door controller can store up to 2500 transactions. How long a time this represents depends, of course, on the amount of activity in the system. For instance if there are 100 transactions a day (that is all events that are printed), the memory represents about 25 days activity.

On occasion it might be necessary to clear this memory. Such an occasion will be where a printer is connected for the first time after the system has been in use for some time. Unless the memory was cleared, all 2500 transactions will be automatically printed, requiring about 50 pages of printer paper.

To clear all transactions:

Present the editor key to the front panel reader.

If required, type the password and press **ENT**.

The CMD prompt is displayed.

Type K and press **ENT**.

Type Y to clear all transactions from memory.

4. Displays and Alarms

Each controller with a front panel displays information about the status of doors and communications. The master controller will, in addition, show information such as alarms reports and communication errors between the master and any slave controllers.

This section describes the various displays and is split into the following sections:

- **Normal Operation**. This describes what to expect on the display when the system is operating normally.
- **Alarms**. This describes the how alarms are handled by the controller and includes **Accepting Alarms**, **Uncleared Alarms**, etc.
- **Communication Errors**. This describes the various communication errors that can occur.
- **Other System Messages**. This provides a description of other displays that may appear on the front panel.

4.1 Normal Operation

The following displays show what to expect when the system is operating normally, with no errors or alarms.

Master Controller
The display will be blank when no doors are open and everything is operating normally.

Slave Controller
A number, the address of the door controller (2, 3 or 4), will flash at the right of the display. This indicates that the slave controller is being 'polled' by the master.

Examples

Master and Slave
This display indicates one or more doors being unlocked on the door controller. This may be due to:

- A valid key being presented to a reader.
- A **Request to Exit** switch being pressed.
- The door being automatically open due to a time profile.
- The door being opened by a Manual Unlock command.

4.2 Alarms

The door controller is capable of reporting several types of alarm condition. These are described below along with the screen display and printer transaction

All alarm conditions, wherever they occur, are reported at the master controller. If communications are broken between a slave and the master, the slave itself will report the alarm. When communications are restored, the alarm will be transferred to the master - **even if the alarm was accepted at the slave.**

When a printer is fitted, a record of the alarm along with its time, date and location is reported. When the alarm condition clears, another report will be generated with the date and time of the event.

4.2.1 Accepting Alarms

All alarm conditions must be accepted at the master. This is done by presenting a master or editor key to the front panel reader. All editor keys, including the master, will accept alarms. The printer, if fitted, will show the date, time and identity of the editor that accepted the alarm.

4.2.2 Alarm Activations

Below are shown examples of alarm activations. In each case, the display shown will appear indicating the type of alarm and its location. At the same time a pulsing beep will be generated. The display and beep will continue until the alarm is accepted.

If more than one alarm occurs, the next alarm will appear on the display only once the first is cleared. All alarms however will be printed as they occur.

READER 1 ALARM

Unauthorised Access, a door has opened (may be 2 readers/door) without a key being presented or a **Request to Exit** button pressed. **Anti-Tamper Alarm**, a reader cable has been cut or a reader has been removed.

Printer: Shown below is the alarm, the alarm cleared and acceptance report for unauthorised access and anti-tamper.

```
11/11/93  16:27  FRONT DOOR                  Unauthorised Access
11/11/93  16:27  FRONT DOOR                  Alarm Cleared
11/11/93  16:28  FRONT DOOR     MASTER KEY   Local Alarm Accepted

11/11/93  16:34  FRONT DOOR                  Anti-tamper Alarm
11/11/93  16:35  FRONT DOOR                  Alarm Cleared
11/11/93  16:36  FRONT DOOR     MASTER KEY   Local Alarm Accepted
```

D/C 1 OVERRIDE

Door Controller Override, a door controller override input has been activated. This causes all the doors on the door controller to open.

Printer: Shown below is the alarm, alarm cleared and acceptance report.

```
11/11/93  14:18  DOOR CTRLR 1              Override Alarm
11/11/93  14:18  DOOR CTRLR 1              Override Alarm Reset
11/11/93  14:18  DOOR CTRLR 1 MASTER KEY   Local Override Accept
```

IP 001 ACTIVE

Zone Alarm, an alarm module input has been activated.

Printer: Shown below is the alarm, alarm cleared and acceptance report.

```
11/11/93  17:24  ZONE   1                  Alarm Zone Active
11/11/93  17:24  ZONE   1                  Zone Restored, ReArmed
11/11/93  17:24  ZONE   1     MASTER KEY   Local Alarm Accepted
```

DURESS 02 ALARM

Duress Alarm, a PIN Reader Duress alarm. A key holder has gained entry using a PIN reader, but has entered their duress code (normal PIN +1).

Printer: Shown below is the alarm and acceptance report.

```
11/11/93  16:17  SALES OFFICE SMITH AB      PIN Reader Duress Alarm
11/11/93  16:17  SALES OFFICE MASTER KEY    Local Duress Accepted
```

DC 1 TAMPER

Case Tamper, a door controller cabinet has been opened.

Printer: Shown below is the alarm, alarm cleared and acceptance report.

```
11/11/93  17:49  DOOR CTRLR 1              Anti-tamper Alarm
11/11/93  17:50  DOOR CTRLR 1              Alarm Cleared
11/11/93  17:50  DOOR CTRLR 1 MASTER KEY   Local Alarm Accepted
```

MODULE 01 ALARM

Alarm Module Tamper, a alarm module case has been opened.

Printer: The following shows the alarm, alarm cleared and acceptance report.

```
11/11/93  14:16  Alarm Module 01           Anti-tamper Alarm
11/11/93  14:16  Alarm Module 01           Alarm Cleared
11/11/93  14:16  Alarm Module MASTER KEY   Local Alarm Accepted
```

4.2.3 Uncleared Alarms

Once one or more alarms have been accepted, the door controller will display the status of any uncleared alarms. Also shown will be the states of any Alarm Module inputs.

`CHn- d iiiiiiii`

Master and Slave

This display appears if there are any **accepted** alarm conditions present on the door controller. If more than one channel has an alarm condition, the display will show each channel for about 2 seconds.

The display only shows the status of the channels

`CHn` The reader channel number, *n*=1-4

d Door state where *d* =A, alarm condition
=O, door left open
=C, closed
=*H*, access inhibited by alarm panel being armed
=*X*, external alarm active (DR4 input active)

i Alarm Inputs where *i* =-, not used
=I, isolated (manual or auto)
=A, active
=N, normal
=*T*, tamper (input shorted)
=*R*, trouble (input open-circuit)

4.2.4 Communication Errors

When a master controller has one or more slave controllers attached, there is always the possibility of a break in communications. If this occurs, the master door controller will report this on its display.

If there is more than one error, that is more than one slave door controller is not communicating, each message will be displayed in turn for about 5 seconds.

`D/C 2  ERROR-1`

Comms Error 1

A comms error 1 indicates that the master door controller is trying to communicate with a slave but is getting no response. This may be because:

- The slave is not powered.
- The address of the slave is not set correctly.
- The cable between the master and slave is broken or disconnected.

`D/C 2  ERROR-2`

Comms Error 2
Comms Error 3

These errors indicate problems with data reception from a slave door controller. This may indicate poor wiring, or strong electrical interference.

4.3 Other System Messages

Other displays that you may see on the front panel display are:

```
D/C 2 UPDATE-01
```

Update Progress

If changes are made that affect a slave door controller, these will automatically be sent. However if a large number of changes are made or the slave is not connected, the changes will be stored. This display indicates how many updates are currently stored for each door controller. Once the door controller communications are restored you should see the number decrease to 0.

```
DOWNLOAD  26-9
```

Download Progress

You will see this message on the screen when you leave the editor after initiating a download to all the slave door controllers. It indicates the progress of the download, in this example 26.9%. The download will be complete when it reaches 100%.

5. Transactions

This section shows all the transactions generated by a door controller. Other types of transaction may be generated by other parts of the system, such as the PC, CNC, etc.

5.1 Transaction Details

Each transaction described below shows:

Number, this is used as a reference, particularly in some PC-based administration systems.

Description, this is the text produced on the printer or PC screen.

Priority, all **high priority** transactions will be sent to the administration system or printer, before any other transactions. A list of all high priority transactions is shown below.

Dial-Back, these transactions will cause the door controller to dial-back to a Multi-Site CNC.

Forget? some types of transaction can be forgotten by the door controller, allowing other transactions to be sent faster. To set this feature, see *17263 PAC 2200 Series Controllers Installation Guide*.

Number	Description	Priority	Dial-Back?	Forget?
1	**Exit Authorized** A key has been allowed through an access point that was set as an exit point. This would be channel 3 or 4 on a Readykey K2200 or channel 2 on a Readykey K1200. Entry and exit points are only set by using Channel Interlock or Passback.		If programmed	positive
2	**Entry Authorized** A key has been allowed through an access point that was set as an entry point. This would be channel 1 or 2 on a Readykey K2200 or channel 1 on a Readykey K1200. Entry and exit points are only set by using Channel Interlock or Passback.		If programmed	positive
3	**Access Authorized** A key has been allowed through an access point. This transaction will always be generated unless the access point is set as entry or exit, when one of the two previous transactions will be produced.		If programmed	positive
4	**Free Exit** This is a special condition where a door contact is fitted but no request to exit button is used. Every time the door opens without a key being used this transaction will be generated. A special lock mode option is required.			free exit
5	**Emergency Override Off** Using a special lock mode option, the request to exit input can be used to monitor an emergency break-glass (manual pull). This transaction occurs when the switch is restored.	high		yes
6	**Emergency Override On** Using a special lock mode option, the request to exit input can be used to monitor an emergency break-glass (manual pull). This transaction occurs when the switch is broken.	high		yes

Number	Description	Priority	Dial-Back?	Forget?
7	**Request to Exit** The Request to Exit switch has been used to open a door.			RTE
8	**Request for Entry** A special lock mode option can be used to allow a Request for Entry transaction. This may be used when a button is used from inside an area to allow a person access.			RTE
9	**Unauthorized Access** A door has been opened without a key being presented or the Request to Exit being pressed.	high	yes	
10	**No Access: Level** A key has been presented, but is not allowed through this door.	high		negative
11	**No Access: Locked Out** A key has been presented, but it is not been given any access authority.	high		negative
12	**No Access: Time** A key has been presented, but is not allowed through this door at this time.	high		negative
13	**No Entry: Passback** A key has been presented, but will not allowed through this door until it has left the pass-back area.	high		negative
14	**No Access: Holiday** A key has been presented, but a holiday period has been assigned to this key.	high		negative
15	**Door Left Open** A door has been left open beyond the time allowed.	high	yes	
16	**Door Closed** A door has been closed after being left open.	high	yes	
17	**Anti-Tamper Alarm** A reader has been disconnected or its cable has been broken.	high	yes	
18	**Alarm Cleared** A door has been secured after an Unauthorized Access or a reader/cable has been restored after an anti-tamper alarm.	high		
19	**Override Alarm** An override alarm has opened all the doors attached to the door controller.	high	yes	
20	**Override Alarm Reset** The override input has been cleared, all the doors will close again.	high		
21	**Manual Lock** An operator has manually locked a door open on a time profile, or previously opened manually.	high		
22	**Manual Unlock** An operator has manually unlocked a door.	high		
23	**Automatic Lock** A door has automatically locked on a time profile.			time event

Number	Description	Priority	Dial-Back?	Forget?
24	**Automatic Unlock** A door has automatically unlocked on a time profile.			time event
25	**Editor Off** An operator has exited the editor of a PC administration system or it has timed out.			
26	**Editor On** An operator has entered the editor of a PC administration system.			
27	**Alarm Zone Active** An Alarm Module or AEM input has activated.	high	yes	
28	**Zone Restored & Rearmed** An alarm module input has been restored. If reactivated it will cause another alarm.	high		
29	**Auto Zone Disable** An alarm module input has been disabled with a time profile.			time event
30	**Auto Zone Enable** An alarm module input has been enabled with a time profile.			time event
31	**Local Alarm Accepted** An alarm has been accepted at the door controller by presenting an Editor key.	high		
32	**No Access: Visit Time** A visitor key has been presented, but its visit time has expired.	high		negative
33	**No Access: Unknown ID** A key has been presented, but it is unknown to the door controller.			negative
34	**Manual Zone Disable** An alarm module input has been disabled by an operator.			
35	**Manual Zone Enable** An alarm module input has been enabled by an operator.			
36	**Alarm Acknowledged** An Unauthorized Access, Anti Tamper or Zone Alarm has been accepted by an operator.			
37	**Override Alarm Accepted** An Override Alarm has been accepted by an operator.			
38	**RTE Button Held Down** A Request to Exit button has been continuously tripped 5 cycles and the door has closed.	high		
39	**Repeated Key Use** The same key has been presented continuously to a reader for 5 lock cycles and the door has closed.	high		
40	**PIN Reader Duress** A PIN duress code has been entered (PIN +1) and the door has opened.	high	yes	

Number	Description	Priority	Dial-Back?	Forget?
41	**Duress Alarm Accepted** A PIN Duress Alarm has been accepted by an operator at the PC administration system.			
42	**Local Duress Alarm Acpt** A PIN Duress Alarm has been accepted by an operator at the door controller.	high		
44	**Remote RTE** A door has been temporarily unlocked by the PC administration system.	low		
45	**No Exit: Passback** A key has been presented, but will not allowed through this door until it has entered the pass-back area.	high		negative
46	**Exit Out of Hours** A key has been allowed to pass through an exit door, although a time profile would not normally let the key through. A special lock mode option needs to be set on the door to allow this feature.			positive
47	**Editor Off (Panel)** An operator has left the **Editor** mode, or it has timed out, at the faceplate-administrated system.			
48	**Editor On (Panel)** An operator has entered the **Editor** mode at the faceplate			
49	**Power Off** The door controller has had its power removed, or the Reset button has been pressed.	high	yes	
50	**Power On** The door controller has been powered up, or the Reset button has been released.	high		
54	**Incorrect PIN Entry** A keyholder has made 5 attempts to enter a PIN without success. That key will not be accepted for 2 hours.	high		negative
55	**Manual Relay Reset** A relay, either on the door controller or an Alarm Module, has been reset by an operator. This may occur by disabling a time profile controlling the relay, or switching off the relay record itself.			
56	**Manual Relay Set** A relay, either on the door controller or an Alarm Module, has been set by an operator. This may occur by enabling a time profile controlling the relay, or switching on the relay record itself.			
57	**Auto Relay Reset** A relay, either on the door controller or an Alarm Module, has been reset by a time profile.			time event
58	**Auto Relay Set** A relay, either on the door controller or an Alarm Module, has been set by a time profile.			time event

Number	Description	Priority	Dial-Back?	Forget?
59	**Zone Tamper Alarm** A zone on an Alarm Event Manager has been tampered (open circuit).	high	yes	
60	**Zone Trouble Alarm** A zone on an Alarm Event Manager has been troubled (short circuit).	high	yes	
61	**Zone Restored & Disarmed** An Alarm Module, or Alarm Event Manager, input has been restored, because it has passed its re-arm count. If reactivated it will not cause another alarm. The input will not be rearmed until the end of the arming period.	high		
62	**Zone Tamper Accepted** An operator has accepted a Tamper Alarm on an Alarm Event Manager.	high		
63	**Zone Trouble Accepted** An operator has accepted a Trouble Alarm on an Alarm Event Manager.	high		
64	**Zone Tamper Cleared** A Trouble condition (short circuit) has been restored to normal.	high		
65	**Zone Trouble Cleared** A Tamper condition (open circuit) has been restored to normal.	high		
74	**Comms Error Type 1** A master controller has polled a slave controller on the six wire bus and failed to receive an acknowledgement. This could be caused by: The six wire bus cable being broken The slave door controller not being powered The slave controller having the wrong address The slave door controller being faulty **Note** A Comms Error 1 can only occur on a six wire bus system.			
75	**Comms Error Type 2** This means that an incorrect reply was received to an issued command. This type of error rarely occurs and is usually due to noise on the cable or a software incompatibility.			
76	**Comms Error Type 3** This means that the reply from a door controller was not received or understood. This could be caused by: Faulty communications cabling. One or more door controllers may have the same address set.			
77	**Comms Restored** A previous Comms Error (1,2 or 3) has now cleared.			

Number	Description	Priority	Dial-Back?	Forget?
79	**Comms Violation** An attempt was made to communicate with the door controller by a CNC that did not have the correct master key. This condition will only be detected if Comms Protection is set.			
80	**Dial-Back Failure** A door controller failed to get through to Multi-Site CNC.			
86	**Local Override Accept** A door controller override alarm has been accepted at the faceplate			
89	**No Access: Armed** A user with invalid alarm privileges has tried to access an area that is armed. Reports the name of the user and the door where it occurred.	high		negative
90	**Alarm Perimeter Armed** The boundary of a building has been armed on a Radionics alarm panel (only available when K2050 Alarm Integration Module and EPROM 13038 fitted.			
91	**Alarm Full Armed** All alarm areas of the building have been armed on a Radionics alarm panel (only available when K2050 Alarm Integration Module and EPROM 13038 fitted.			
92	**Alarm Disarmed** All alarm areas of the building have been disarmed on a Radionics alarm panel (only available when K2050 Alarm Integration Module and EPROM 13038 fitted.	high		
95	**External Inhibit On** Access through doors has been inhibited by the DR3 input going active. Reports the door and the alarm area (if assigned) affected.	high		
96	**External Inhibit Off** Access through doors is now permitted after DR3 input has gone inactive. Reports the door and the alarm area (if assigned) affected.	high		
97	**Auto Inhibit Active** A door has been inhibited by an area being armed (only available when intelligent alarm panel fitted). Reports the door and the alarm area affected	high		
98	**Auto Inhibit Removed** A door inhibit has been removed by an area being disarmed (only available when intelligent alarm panel fitted). Reports the door and the alarm area affected	high		
99	**Panel Manually Armed** An intelligent alarm panel has been armed via its own keypad. Reports the alarm area affected.			
100	**Panel Manually Disarmed** An intelligent alarm panel has been disarmed via its own keypad. Reports the alarm area affected.			

Number	Description	Priority	Dial-Back?	Forget?
101	**Area Armed** An intelligent alarm panel has confirmed an area being armed via the door controller arming readers or remotely from a PC. Reports the alarm area affected.			
102	**Area Armed & Forced** An intelligent alarm panel has confirmed an area being armed by forcing bad loops. Reports the alarm area affected.	high		
103	**Area Armed & Bypassed** An intelligent alarm panel has confirmed an area being armed by bypassing bad loops. Reports the alarm area affected.	high		
104	**Area Arming Failed** An intelligent alarm panel has rejected a request to arm an area via the door controller arming readers or remotely from a PC. Reports the alarm area affected.	high	yes	
105	**Area Disarmed** An intelligent alarm panel has confirmed an area being disarmed via the door controller disarming readers or remotely from a PC. Reports the alarm area affected.			
106	**Area Disarming Failed** An intelligent alarm panel has rejected a request to disarm an area via the door controller disarming readers or remotely from a PC. Reports the alarm area affected.	high	yes	
107	**Local Arming Request** A user has presented a valid key to an arming (entry) reader and pressed the arming button. Reports the name of the user and the door where the arming reader is situated.			
108	**Local Disarming Request** A user has presented a valid key to a disarming (exit) reader. Reports the name of the user and the door where the disarming reader is situated.			
109	**Remote Arming Request** A user has requested that an area be armed via a PC. Reports the alarm area affected.			
110	**Lock Power Overload** A lock is drawing too much current. Reports the door effected.	high		
111	**Lock Power Normal** A lock is no longer in a lock power overload condition Reports the door effected.	high		
112	**Remote Disarming Request** A user has requested that an area be disarmed via a PC. Reports the alarm area affected.			
113	**Alarm from Panel** An intelligent alarm panel has indicated that an area has gone in to an alarm condition. Reports the alarm area affected.	high	yes	

Number	Description	Priority	Dial-Back?	Forget?
114	**Alarm Clear from Panel** An intelligent alarm panel has indicated that an alarm condition has been cleared. Reports the alarm area affected.	high		
115	**Alarm Panel Comms Lost** Communications between a door controller and an intelligent alarm panel have been lost. Reports the door controller affected.	high		
116	**Alarm Panel Comms. Restored** Communications between a door controller and an intelligent alarm panel have been restored. Reports the door controller affected.	high		
117	**External Alarm** An alarm area has gone into an alarm state. Reports the name of the door and alarm area affected.	high	yes	
118	**External Alarm Clear** An alarm area is no longer in an alarm state. Reports the name of the door and alarm area affected.	high		
119	**Some Areas Armed** Reported when any (but not all) alarm areas are armed. Reports the door controller name.			
120	**All Areas Armed** Reported when **all** alarm areas on a door controller are armed. This event affects how perimeter doors behave.			
121	**All Areas Disarmed** Reported when **all** alarm areas on a door controller are disarmed.			

5.2 High Priority Transactions

These transactions are always sent to the printer or administration system before any other transactions.

5	Emergency Override Off	50	Power On
6	Emergency Override On	54	Incorrect PIN Entry
9	Unauthorised Access	59	Zone Tamper Alarm
10	No Access: Level	60	Zone Trouble Alarm
11	No Access: Locked Out	61	Zone Restored & disarmed
12	No Access: Time	62	Zone Tamper Accepted
13	No Entry: Passback	63	Zone Trouble Accepted
14	No Access: Holiday	64	Zone Tamper Cleared
15	Door Left Open	65	Zone Trouble Cleared
16	Door Closed	89	No Access: Armed
17	Anti-Tamper Alarm	95	External Inhibit On
18	Alarm Cleared	96	External Inhibit Off
19	Override Alarm	97	Auto Inhibit Active
20	Override Alarm Reset	98	Auto Inhibit Removed
21	Manual Lock	102	Area Armed & Forced
22	Manual Unlock	103	Area Armed & Bypassed
27	Alarm Zone Active	104	Area Arming Failed
28	Zone Restored & ReArmed	105	Area Disarmed
31	Local Alarm Accepted	106	Area Disarming Failed
32	No Access: Visit Time	110	Lock Power Overload
36	Alarm Acknowledged	111	Lock Power Normal
37	Override Alarm Accepted	113	Alarm from Panel
38	RTE Button Held Down	114	Alarm Clear from Panel
39	Repeated Key Use	115	Alarm Panel Comms Lost
40	PIN Reader Duress	116	Alarm Panel Comms. Restored
42	Local Duress Alarm Acpt	117	External Alarm
45	No Exit: Passback	118	External Alarm Clear
49	Power Off		

5.3 Dial Back Transactions

These transactions will cause a door controller to dial-back to a Multi-Site CNC.

9	Unauthorised Access	49	Power Off
15	Door Left Open	59	Zone Tamper Alarm
16	Door Close	60	Zone Trouble Alarm
17	Anti-Tamper Alarm	104	Area Arming Failed
19	Override Alarm	106	Area Disarming Failed
27	Alarm Zone Active	113	Alarm from Panel
40	PIN Reader Duress	117	External Alarm

In addition, the following transactions will result in dial-back if they are programmed to do so:

1	Exit Authorised
2	Entry Authorised
3	Access Authorised

5.4 'Forget' Transactions

The door controller can be programmed **not** send certain groups of transactions. You can choose which of the following groups are not sent.

Request to Exit

These transactions may form 40-50% of all the transactions in a system. By allowing the door controller to 'forget' these events, the throughput of more significant transactions can be improved.

7 Request to Exit
8 Request for Entry

Free Exit

This transaction allows free exit through a door.

4 Free Exit

Timed Events

These are reports of events that happen automatically as a result of a time profile being applied.

23 Automatic Lock
24 Automatic Unlock
29 Auto Zone Disable
30 Auto Zone Enable
57 Auto Relay Reset
58 Auto Relay Set

Positive Transactions

These are records of normal key usage. By allowing the door controller to 'forget' these events, throughput may be considerably improved.

1 Exit Authorised
2 Entry Authorised
3 Access Authorised
46 Exit Out of Hours

Note

Some administration system functions such as presence in area, muster mode, current user, etc. along with other functions that rely on detecting the movement of personnel, will not work if these events are not sent.

Negative Transactions

These are records of key usage where access was denied. By allowing the door controller to 'forget' these events, throughput can be considerably improved.

10 No Access: Level
11 No Access: Locked Out
12 No Access: Time
13 No Entry: Passback
14 No Access: Holiday
32 No Access: Visit Time
39 Repeated Token Use
40 PIN Reader Duress Alarm
45 No Exit: Passback
54 Incorrect PIN Entry
89 No Access: Armed

6. Troubleshooting

This section is designed to help you "troubleshoot" any problems that may occur. Once the system has been installed and commissioned, the majority of the problems that are likely to occur will be due to incorrect programming of the system. Any hardware problems that may arise (broken cable, faulty reader, etc.) have already been dealt with in the *17263 PAC 2200 Series Controllers Installation Guide*.

As the main problems involve programming the system a flowchart is provided for each problem which takes you through a series of checks which will hopefully resolve the problem. The note **"installer**" means that it may be a hardware fault and you should refer to *17263 PAC 2200 Series Controllers Installation Guide*. Where instructions are given (e.g. add access group), refer to the appropriate section of this document for details.

The following problems are covered:

- Key not working - access not allowed through one of the doors in the system.
- No access to **Editor** mode.
- User cannot add/delete keys, etc.

Note

It is assumed that the system has been commissioned and tested and all installation problems resolved.

6.1 Key Not Working

Note

This section is primarily for use with standalone systems. Troubleshooting for networked systems is primarily via a PC. However, for completeness, troubleshooting for the PC is also included here.

The following flowcharts assume that the reader being used is a KeyPAC reader. If a different reader is being used, refer to the following table to see how the LED should work. For example, if the PAC Standard Plus reader is being used, the reader LED will normally be red. It will go green when a valid key is presented and will flash red/green if an invalid key is presented.

Reader	Type	Normal Status (door closed)	With Valid Key	With Invalid Key
KeyPAC Readers	Slimline	OFF	GREEN	RED/GREEN PULSE
	Vandal Resistant	OFF	GREEN	RED/GREEN PULSE
	Standard Plus	OFF	GREEN	RED/GREEN PULSE
PAC	Magstripe	RED (power)	GREEN	RAPID GREEN PULSE
	Standard Plus	RED	GREEN	RED/GREEN PULSE
	Slimline	RED	GREEN	RED/GREEN PULSE
	Vandal Resistant	RED	GREEN	RED/GREEN PULSE

When a key is presented within range of the reader (or swiped if a Magstripe reader) the LED will flash green momentarily to indicate the code in the key has been read. If the key is valid for that door at that time, the LED will go green and the lock will operate. The LED will stay green while the lock is released.

If the key is invalid, it will flash red/green for the specified lock release time (default is 5 seconds).

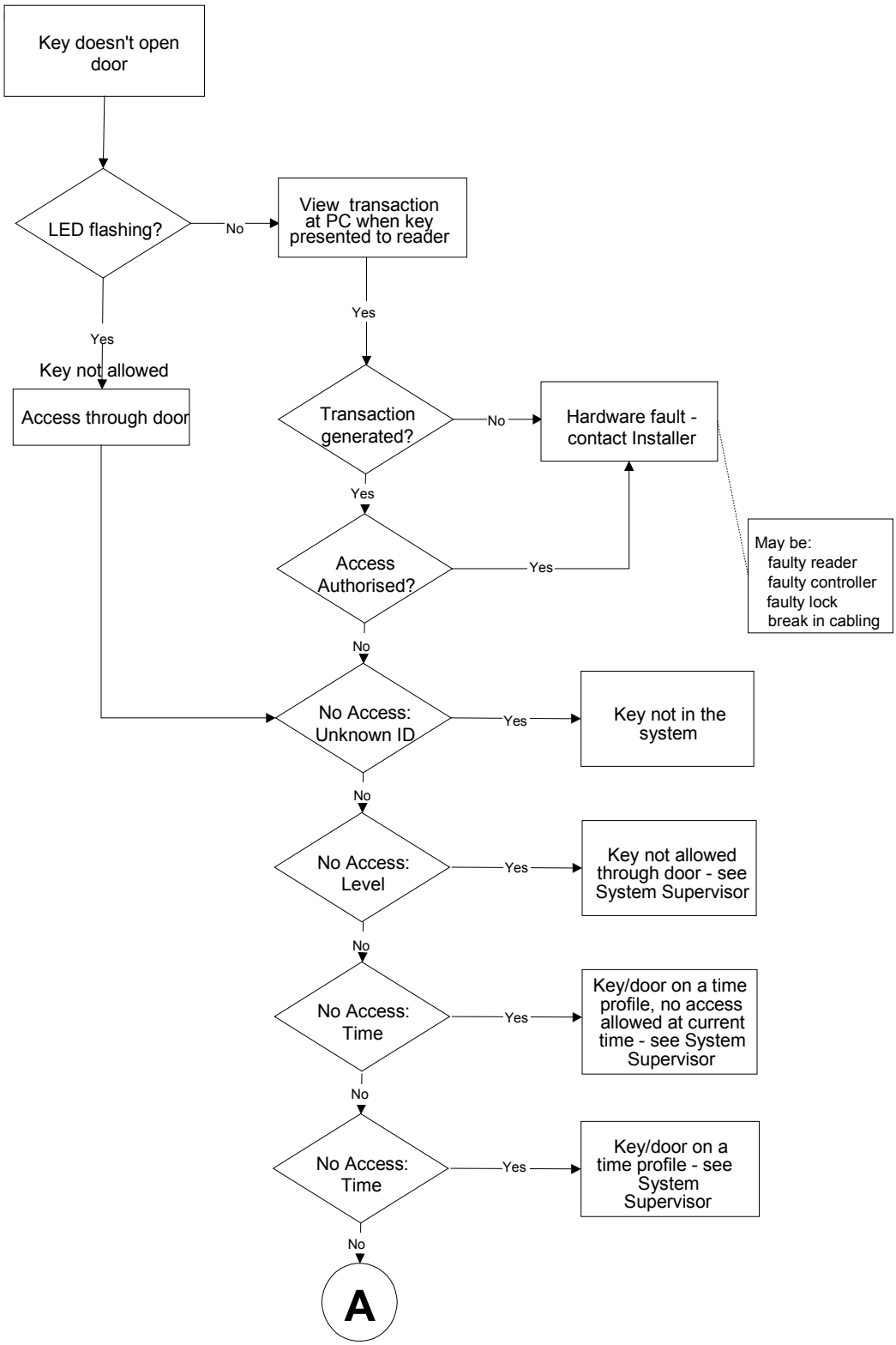


Figure 14 PC-Based System Sheet 1

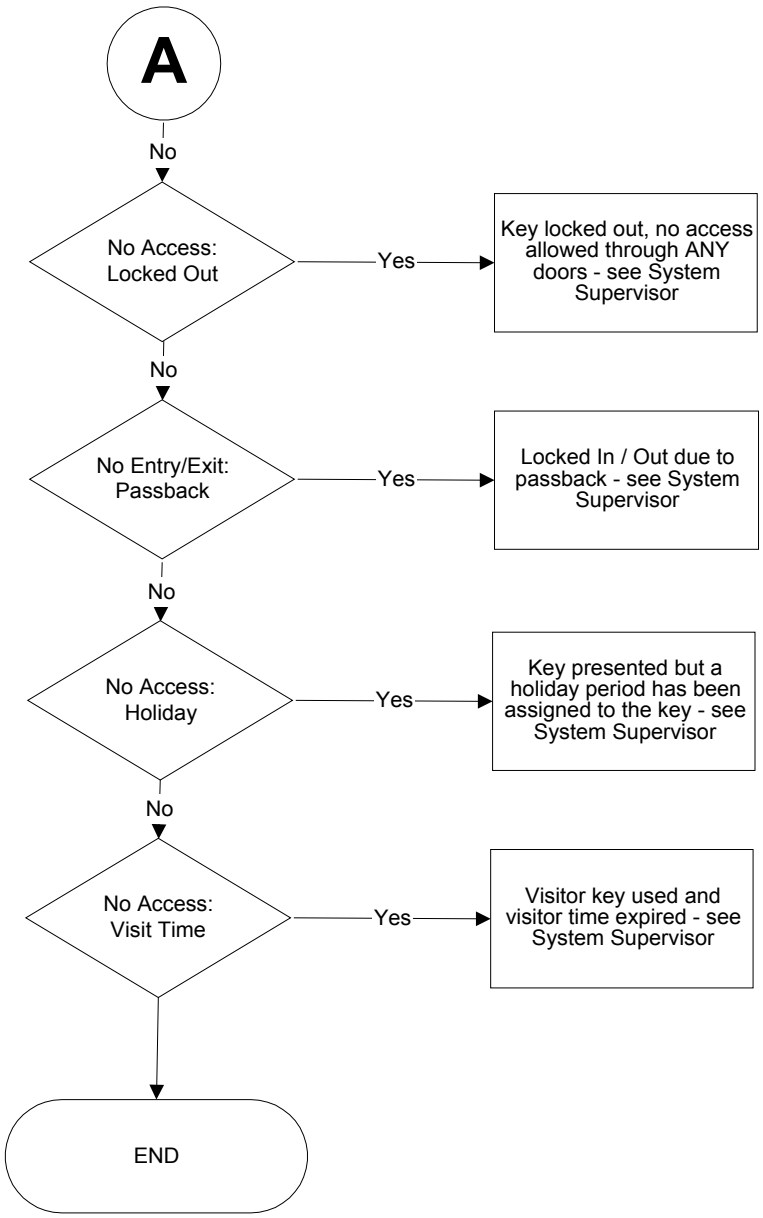

A
No
No Access: Locked Out
Yes
Key locked out, no access allowed through ANY doors - see System Supervisor
No
No Entry/Exit: Passback
Yes
Locked In / Out due to passback - see System Supervisor
No
No Access: Holiday
Yes
Key presented but a holiday period has been assigned to the key - see System Supervisor
No
No Access: Visit Time
Yes
Visitor key used and visitor time expired - see System Supervisor
END

Figure 15 PC-Based System Sheet 2

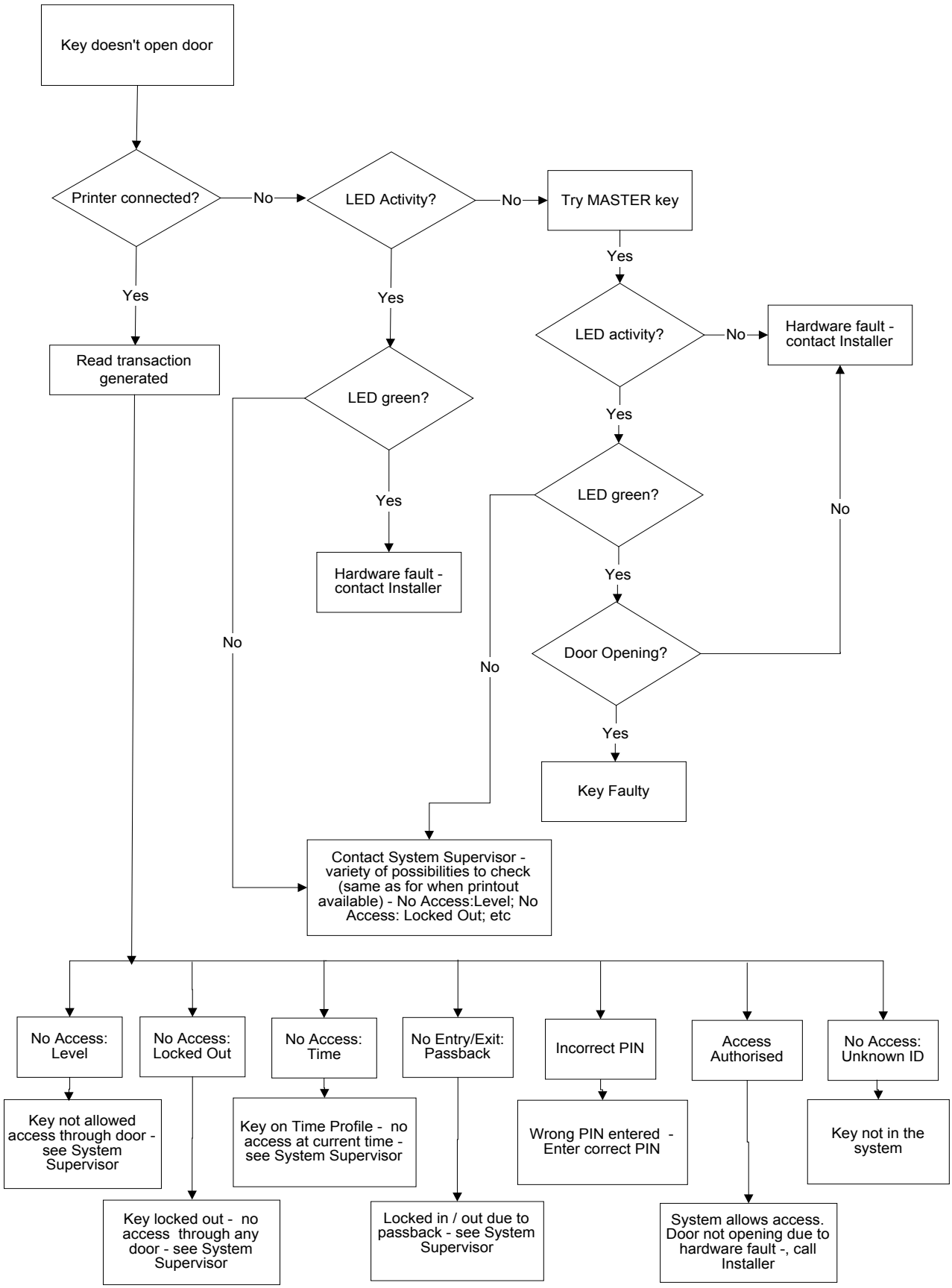

Key doesn't open door
Printer connected?
No
LED Activity?
No
Try MASTER key
Yes
Yes
Yes
LED activity?
No
Hardware fault - contact Installer
Read transaction generated
LED green?
Yes
Yes
LED green?
Yes
Hardware fault - contact Installer
No
No
No
Door Opening?
Yes
Key Faulty
Contact System Supervisor - variety of possibilities to check (same as for when printout available) - No Access:Level; No Access: Locked Out; etc
No Access: Level
No Access: Locked Out
No Access: Time
No Entry/Exit: Passback
Incorrect PIN
Access Authorised
No Access: Unknown ID
Key not allowed access through door - see System Supervisor
Key on Time Profile - no access at current time - see System Supervisor
Wrong PIN entered - Enter correct PIN
Key not in the system
Key locked out - no access through any door - see System Supervisor
Locked in / out due to passback - see System Supervisor
System allows access. Door not opening due to hardware fault -, call Installer

Figure 16 Standalone System

6.2 No Access to Editor Mode

This will basically happen if:

- Key is not an editor key.
- Editor key does not have the required privileges.
- Editor key is faulty.
- Editor is faulty.

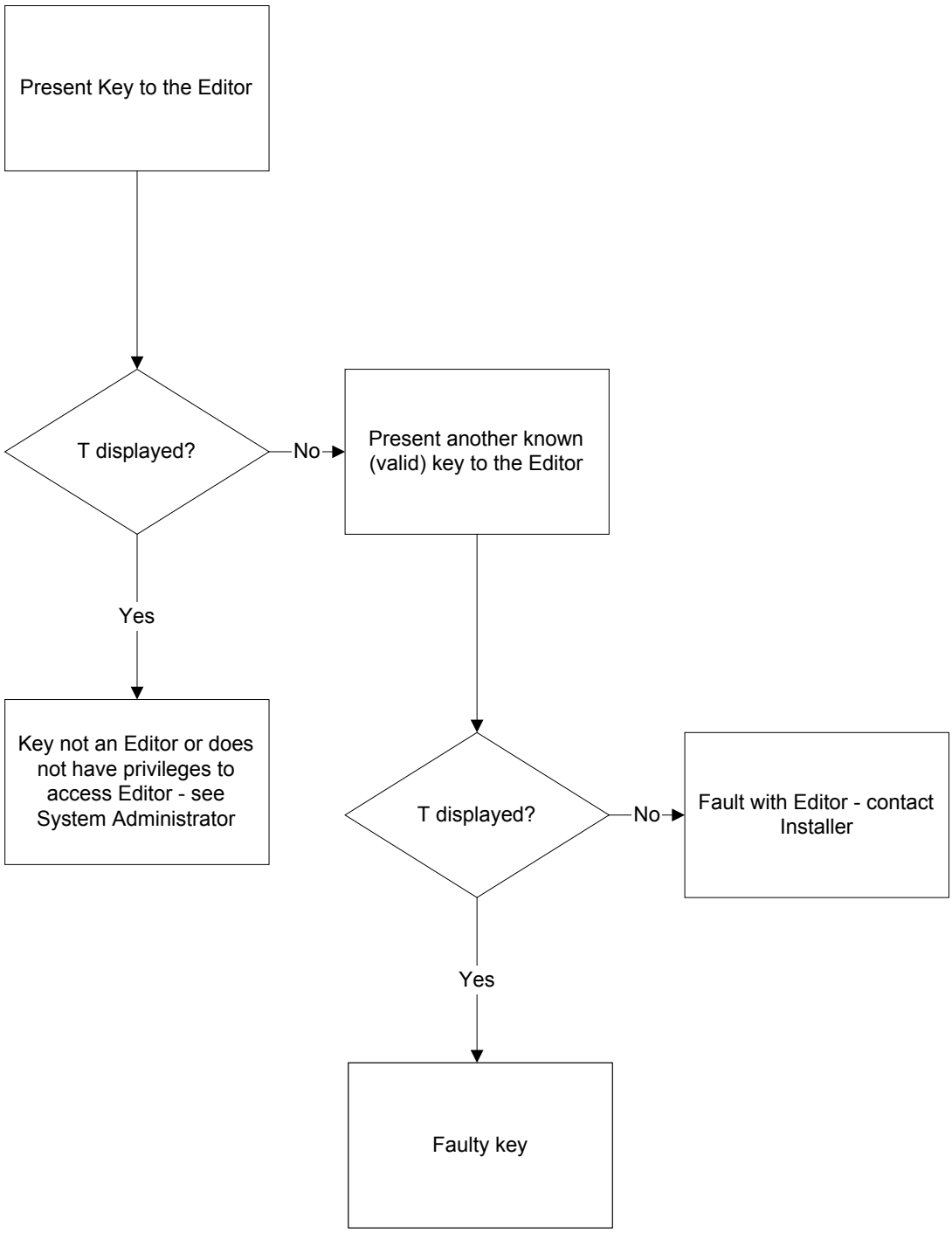

Present Key to the Editor
T displayed?
No
Present another known (valid) key to the Editor
Yes
Key not an Editor or does not have privileges to access Editor - see System Administrator
T displayed?
No
Fault with Editor - contact Installer
Yes
Faulty key

Figure 17 No Access to Editor

6.3 Cannot Add/Delete Keys

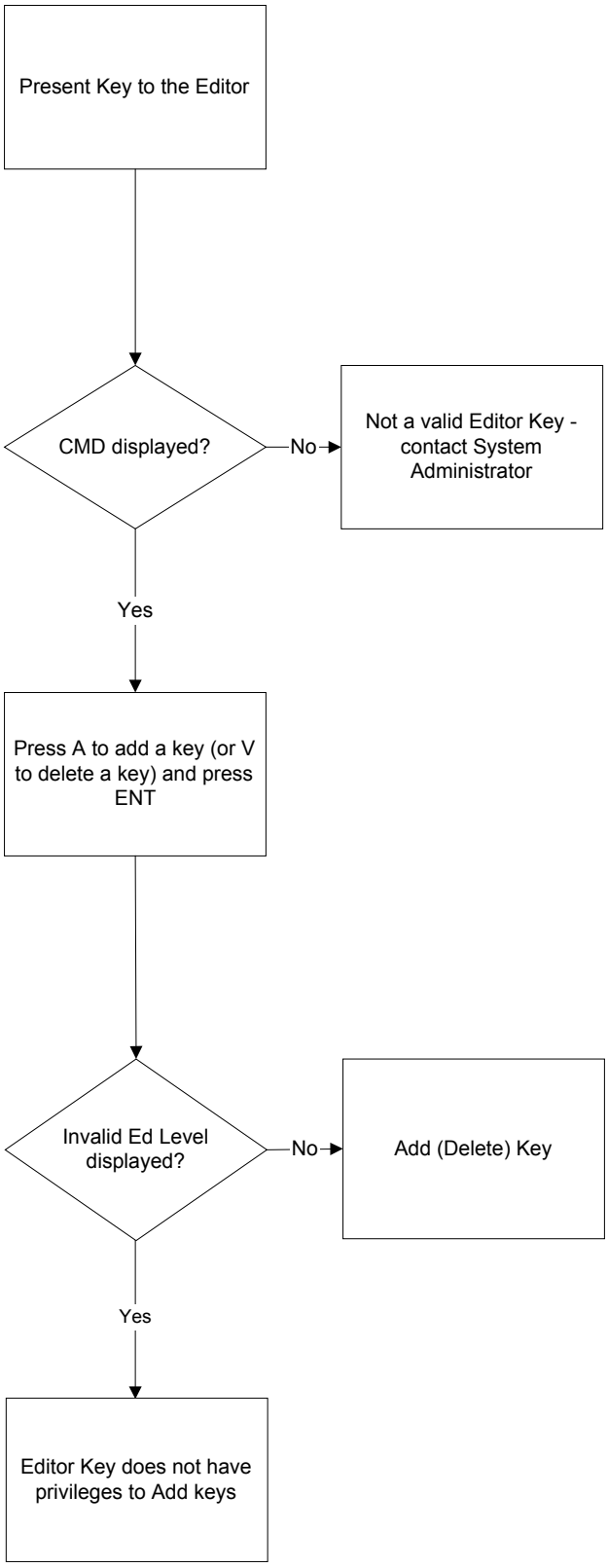

Present Key to the Editor
CMD displayed?
No
Not a valid Editor Key - contact System Administrator
Yes
Press A to add a key (or V to delete a key) and press ENT
Invalid Ed Level displayed?
No
Add (Delete) Key
Yes
Editor Key does not have privileges to Add keys

Figure 18 Cannot Add/Delete Keys

7. Specification

This section details the system specification for a **standalone system**.

Access Points	16 One master 4-door PAC 2244 or 2-door PAC 2222 controlling up to three slaves, a slave may be 4-door PAC 2244 or 2-door PAC 2222 controller.
Personnel	4000
Editor Keys	Master key plus 32 editor keys, each with optional password and editor level.
Access Codes	128, comprising two access levels, each with a time profile.
Access Levels	128
Time Profiles	128, each comprising 3 time periods (max. 32 time periods).
Holiday Profiles	24, each comprising 20 holiday periods (max. 254 holiday periods).
System Holidays	20, for controlling access on public holidays.
Transactions	2500 most recent transactions stored in non-volatile memory.
Zone Alarms	128, up to 32 per door controller using alarm modules.
Relay Outputs	4 on each door controller, plus 8 on each alarm module. These may be controlled by time profile or system event.
Alarms	Unauthorised access, anti-tamper (on reader, alarm module and door controller), door override, zone, PIN reader duress.
Warning	Door left open
Printer Output	Continuous printing of system events. 9 different reports available on demand.
MTBF	>100,000 hours

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